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Wisconsin Horticulture

VOL. XLVIII MAY, 1963 NO. 1

Promotion – Our Job

President Fritz Meyer, Waldo, Wis.

Promotion is a year-round program with us at Waldo Orchards. During the apple season of course we advertise extensively, using newspapers, radio and billboards. We also donate apples and cider to at least one visit of the Red Cross Bloodmobile during October. At Christmas time we supply the local police with apples for their safety patrol party. Other organizations are either given apples and cider along with napkins printed with a map showing our location, or are given a discount on purchases for prizes. Our newspaper ads usually show our location on a map we had prepared by the newspaper. We also use the map on the reverse side of our business cards.

The highway signs at our orchard are of the same design as the side panel on our delivery van. Our master containers and one-half bushel boxes also carry this same design to help establish our "Trademark Image."

We have used dwarf trees planted in tubs for promotion in stores and at the county and state fairs. People are quite impressed with the sight of a small live tree bearing fruit—indoors!

During the off season we continue our promotional activities by having tours during blossom time. We encourage group visits from Brownies to Golden Agers, both at blossom time and harvest. This year we will have a float in two dairy parades, carrying the message "Apple Pie Without The Cheese Is Like a Kiss Without The Squeeze." This will be a small float, pulled by a miniature tractor driven by one of my young sons. We feel this will appeal to children and adults alike. It also boosts our position in the business community by showing our interest in helping to promote dairy products and civic activities. We have taken booth space at a Lion's Club Homeshow which gave us extra "exposure" to the public.

In addition to 'Blowing our own horn' we support the Wisconsin Apple Institute. We feel that we must sell our own product, but that the job will be easier if we can help the 'other fellow' dispose of his crop to advantage, thus avoiding a depressed market.

In obtaining the services of 'SID' our Society and the Wisconsin Apple Institute have reached a point that many of us have looked forward to since Henry Rahmlow left us. However, in order to continue forward to our goal we must now push ahead and expand our membership. It was often said that if we had the magazine we would have more to offer. Here it is—LET'S MAKE IT WORK FOR US. Let's sell our group efforts to our neighbors and 'Friendly Competitors.' If we don't help ourselves, no one else can or will! I KNOW the weather man was not on our side, but I hope we will all have crops to back up the promotion program I know we need.

In closing. I wish to salute 'SID' for his fine work in his new job. Help him to help you by supporting the organizations. Also by telling him what YOU want. Encourage your suppliers to advertise in this magazine. Use it yourself to find what you need or to sell items you no longer use.

By patronizing our advertisers you help them to help you. 1. They have excellent products needed by fruit growers. 2. They help bring this publication to you. Cooperation pays both ways.

WISCONSIN HORTICULTURE

Published monthly excepting July and December by the Wisconsin State Horticultural Society and the Wisconsin Apple Institute.

Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

S. S. Mathisen, Editor, 1542 So. 82 St., West Allis 14, Wis. Phone—BL 8-1755.

OUR SOCIETY

Within a short time your secretary will be asking for Second Class mailing privilege for this publication. This is to save money for your Society. However, it is a MUST that a paid list of membership be submitted with the application. There are about nine hundred on the present mailing list who have not sent in their 1963 dues or have not written that they are Life Members. A very few Life Members have written.

AND NOW ABOUT OUR COOPERATORS—Several Wis. County Agricultural Agents asked about their standing on the mailing list—since these men are supporting the efforts of the Wis. State Horticultural Society and the Wis. Apple Institute in their program to help the fruit growers of Wisconsin, their names or offices will remain on the list without further requests.

No word has been received from the Agricultural Instructors in High Schools in Wis. If this Newsletter is of value to them in their work it will be sent to them. However, a communication to that effect is necessary. It would be nice if they would indicate what would be helpful to them in their work with some of their students who will surely be fruit growers.

EXCHANGE LIST — A splendid plan much appreciated by this secretary is the exchange of publications, both commercial and other State Horticultural organizations. Several have indicated their desire to continue this plan. It helps not only to keep one another informed but can result in transmitting good information to the fruit growers.

AND PLEASE — if the person to whom this was addressed is deceased, will the one who did get this, PLEASE notify the secretary — S. S. Mathisen, 1542 So. 82nd St., West Allis 14, Wis.?

The directors of the Wisconsin State Horticultural Society and of the Wisconsin Apple Institute and their secretary want to be of real service to the fruit growers of Wisconsin through this publication, the summer meetings, the annual convention, and supplying special sales promotion items.

It should be remembered too, that the Wisconsin Apple Institute through its contribution to the National Apple Institute, helps all apple growers to find a market for this healthful crop. It takes but a little surplus to make quite a reduction in price, so every effort to keep people using apples, helps all who have apples to sell. The Apple Institutes —State and National deserve your financial support. Ask your secretary for more information.

PROMPT MAILING OF DUES WILL MAKE THAT PAID MEMBERSHIP LIST LOOK A LOT BETTER. AS THE CHECKER PLAYER SAID, "IT'S YOUR MOVE."

1963 Apple Crop Prospects

Marlon Schwier, Wis. Dept. Markets

The annual guessing game has already begun. Crop predictions are beginning to filter in although most of the reports are being made with an "if" situation. Generally, to date, all the elements for a normal to good crop have been quite favorable. Bud set last year was good and most areas report a satisfactory overwintering situation. Blossom time had its usual problems—mostly frost, although some damaging rain and hail

was reported in another area. To date there are indications no serious damage has occurred. Door County and the Bayfield area are just reaching blossom stage and they are hopeful for a good set.

Nationally, the crop prospects are still rather vague. We have heard Illinois has suffered severe frost damage with individual losses ranging from 75 to 100 percent. Southern Michigan, Ohio, and some areas along the East Coast also report damage from frost. The extent of their damage will probably not be known for several weeks.

We'll try to give you a more detailed report in the next issue.

(Editor's Note—This was written before May 22nd.)

Licensing and Bonding Law Received Favorable Hearing

Marlon Schwier, Wis. Dept. of Markets

Senate Bill No. 537 S relating to the licensing and bonding of apple and potato buyers received a very favorable hearing before the Senate Agricultural Committee on April 14. The committee later voted 4-0 recommending it for passage.

The bill would require all buyers of apples or potatoes or those who act as a broker in negotiating purchase of potatoes or apples from producers to secure a license from the Department of Agriculture. In addition, the licensee must have in force a surety bond in the amount of $10,000 executed by a bonding company to do business in the state.

Exempt from the license and bonding would be those persons who buy for resale only, cooperative associations marketing apples or potatoes for their members only and persons who buy for cash; that is, those who pay at time of purchase in U. S. currency, certified check, cashier's check or their equivalent.

The annual license fee is $25.

NO INSECT CONTROL??

Some fruit growers are concerned about questions that some of their customers may ask about the chemicals used to produce clean fruit. To begin with, ask them if they know of any **proven** method of getting edible apples without the protection of pesticides. Tell them you'd be most happy to save the cost and labor of applying insecticides and fungicides. In the meantime, keep a careful record of all sprays, the materials, strength used and dates of application. Then when harvest begins, in your copy of Circular 520 C "1963 Insect and Disease Control—Apples, Cherries and Strawberries" underline the chemicals you used so they can see how soon after use that fruit can be used. You might want to take pages 3 and 4 out of the circular and cover it with plastic to protect it.

And here is some excellent information with an Editorial in the Pesticide Institute News, written by Roy W. Rings, Associate Chairman, Dept. of Zoology and Entomology, Ohio Agricultural Experiment Station. In reference to the writer of the book, Silent Spring, quoting, "First, let us examine her first charge that pesticides pose a hazard to the human race. Her implication that chemicals now in use will probably cause genetic mutations in humans is completely speculative. Experts in the Food and Drug Administration say there is no evidence to support this theory. She devotes a considerable part of the book to criticizing the use of DDT claiming that it builds up in the fatty tissues of the body. What she failed to show was that, while residues of DDT do build up in the stored fat in humans, they aren't permanent; and with no additional intake, they disappear in 90 days. The effect has been studied in detail by a group of investigators who fed a daily dosage of DDT to a volunteer group in a Federal prison for 18 months. The dosage of DDT was 200 times greater than the amount the average person would consume in three

full meals. Exhaustive physical examinations were made periodically, as well as biopsies to ascertain the amount of DDT stored in the liver. The health record of the treated group differed in no significant way from the control group.

In regard to this, Robert Drake, farm editor of the Cleveland Plain Dealer said: 'Little girls are made of sugar and spice and everything nice and a few parts per million of DDT. Jack and Jill are exhibits for the defense of the chemical age in agriculture. Their life expectancy at birth today is 70 years, they are two to three inches taller and several pounds heavier than their grandparents at the same age. When they reach mature growth, five years earlier than they would have in 1900, they will be setting new track records for speed and endurance every year'."

In the last issue of the Newsletter we carried an excellent report by Hubert Halliday on the great care by our government officials to protect us from the indiscriminate use of pesticides. See to it that questions to you are propertly answered. This will help you as well as other fruit growers.

VIRUSES

People get 'em, animals get 'em and plants get 'em. We can now purchase virus free strawberry plants and soon we can get virus free raspberry plants. And now it is known that apple trees have viruses. A Research Bulletin by Purdue University reports tests covering several years proving the presence of such viruses as Chlorotic Leaf Spot, Stem Pitting, Line Pattern, Apple Mosaic and others. Perhaps you have had some quite unusual appearance of your trees or apples that you would like to report so others could be watching for it.

For instance this is a case. Mr. Philip Schroeter of New Berlin, who worked in Milwaukee brought to your secretary's office (then Milwaukee County Agent) several apples with very peculiar markings. A heavy russeting appeared on some of the apples from calyx to stem. It might cover only one-eighth, one-fourth, one-half, other fractions or the entire apple. Stranger yet was the appearance of only one or two of these in a cluster of apples. From the same tree some clusters all apparently normal and other clusters all russeted. Mr. Schroeter had, as the facts are recalled, twelve of this variety with six or seven being affected. Specimens were sent to Madison with the report that this had not been seen before. More specimens then sent to the fruit department of the United States Dept. of Agriculture bringing the statement that the trouble was the result of a sport or was a virus. The way to determine which it might be was to graft from an affected tree to a healthy tree and if the fruit from the graft was the only affected fruit on the whole tree, then it was a sport. If however, not only the apples on the graft, but others on the tree had the same trouble, then it was a virus.

THE RESULT YOU WANT TO KNOW?? When Mr. Schroeter was told this he said, "I'm not going to give this a chance to spread, those sick ones are going out of the orchard." Mr. Schroeter has several varieties of apple trees and produces excellent quality fruit.

Dwarf Tree News

(From the Association's News Letter)

A man well known to many Wisconsin commercial orchard men, Mr. Gordon Yates of Minnesota is the 1963-64 Vice-President of the Dwarf Fruit Tree Ass'n.

The 1963 Summer Meeting of the association will be July 30 and 31 at the Treesdale Orchards, Mars, Pennsylvania, about 20 miles north of Pittsburgh. An excellent opportunity to learn more about dwarf fruit trees. The 1964 Seventh Annual Conference of the Dwarf Fruit Tree Ass'n will be held in Michigan, March 10 and 11, 1964.

The 1964 Summer Meeting may seem

far away and that is where it will be held—England, Holland, France and Italy. Groups of 25 to 30 persons will visit the most interesting fruit areas in these four countries.

RASPBERRY WINTERKILL

G. C. Klingbeil, Extension Specialist Fruit Production

University of Wisconsin

Productiveness is probably the most important consideration in selecting a raspberry variety. In Wisconsin, however, hardiness is of equal importance as the reduction in crop is proportional to the amount of winter injury of the canes.

Winter injury can be caused by several conditions: (1) Damage caused by cold temperature, unusually rapid drops to below freezing before the canes have reached dormancy, (2) Dormancy being broken too early in spring followed by damaging freezing temperatures, and (3) Desiccation and bud kill caused by extremely low temperatures and drying winter winds.

Records show that one, or all of the above situations occurred in some areas of Wisconsin in the winter of 1962-63. A survey of a large number of raspberry growers has provided the information for the following summary:

Variety	Per cent Dieback
Latham	0-60% Av. 20%
June	0-50% Av. 10%
September	0-20% Av. 10%
Durham	10-60% Av. 40%
Indian Summer	0-20% Av. 15%
Newburgh	6-60% Av. 40%
Viking	20-45% Av. 40%
Williamette	0-80% Av. 75%
Lake Geneva	2-60% Av. 20%
Sodus (purple)	40-75% Av. 60%
Marion (purple)	10-50% Av. 40%
Clyde (purple)	40-60% Av.55%
Amber (yellow)	10-40% Av. 20%
Eldorado (blackberry)	60-100% Av. 80%

It can be stated that generally the most severe damage occurred in the southern and eastern portions of the state and that poor sites were responsible for an increased amount of winter damage. The purple varieties are only grown in the southern and southeastern parts of the state and in most all cases suffered greater than normal winter damage. All named blackberry varieties were killed back to snow level. The June variety in most cases showed the least amount of winter damage, leafed out early and exhibited vigorous growth. The rather poor showing of the Latham variety, which is considered the hardiest, I feel, is due partly to the condition of the plantings. Many plantings are old and infested with virus and other diseases which weaken the plant and may dispose it to greater damage.

This survey would indicate that in Wisconsin it is wise to select a raspberry of the hardiest variety of the hardiest kinds for your part of the state.

May 20, 1963

We are indebted to the Minnesota Fruit Growers Ass'n for the following:

Why Strawberries Need Cooling Very Soon After Harvest

(From "Studies on Strawberry Quality" California Agric. Feb. 1959)

These studies showed that the initial respiration rates at the higher temperatures exceeded the rate at 32 degrees F. by the factors shown in the center colum. The number of days for the mold to develop are shown in the right hand colum. Under commercial conditions with picking damage it is probable that deterioration would be faster.

Temperature (Degrees F.)	Respiration Rate (factor, exp. above)	Days for Mold
32	0.0	11
41	1.4	5
68	7.2	1.5
86	19.0	0
100	19.6	0

The faster the rate of respiration, the more rapid was the rate of deterioration in quality. The quality of the berries dropped sharply after two hours at 86 degrees F.

"Sticky Boards" – An Orchard Aid

By John L. Libby, Extension Specialist in Entomology

"Sticky Boards" are an excellent means for the orchardist to keep up with apple maggot activity in his orchard. The flies usually begin emerging in late June in southern Wisconsin and in early July in northern Wisconsin. The flies emerge over a period of one to two months, with peak emergence between mid-July and early August.

The "sticky boards" traps **are not a means of insect control** but are an excellent informative tool for the apple producers to use. A "sticky board" trap is quite simple to construct. Take a 6 x 12 inch piece of plywood, paint it yellow, coat with a sticky substance and secure it to the tree at both ends with twine or wire. The board trap will be more effective if you attach a half pint fruit jar, half full of household ammonia, and a piece of screen covering it, to the base of the board. The household ammonia is an excellent attractant for apple maggot flies. Materials such as Stickem, Deadline, Tanglefoot, or polybutenes as Ortho Oronite polybutene can be spread on the boards as the sticky material.

The orchardist should use several "sticky boards in various locations in his orchard. By checking the boards from late June through August a good idea of the apple maggot fly activity can be obtained. This can be important to you as you will know when apple maggot flies are starting to emerge, when they are reaching their peak for the season, and when emergence is completed. This information allows the grower to adjust his spray program to obtain effective apple maggot control. After count is made remove all insects with point of knife blade.

Circular 619 "Control Apple Maggots" can be obtained from the Bulletin Room or John Libby, Extension Entomologist, College of Agriculture, Madison 6, Wisconsin, or from your own County Agricultural Agent.

Safe Use of Weed Killers

Without a doubt there will again this year be unintentional damage caused by weed killers. Those who use these materials should very carefully read the directions and follow them. Some will work successfully only one way while others may be entirely opposite. Some are very selective while others kill all vegetation. There is a proper place for each and carefully used should give good satisfaction. Damage can be caused by drift of fine spray particles or movement of vapors. The fine spray from high pressure machines can drift for miles. Therefore when using a hormone spray like 2 4 D, do so when there is but little breeze and use as low pressure as possible and yet get satisfactory results. On a lawn near shrubs, flowers, small trees or vegetables, use only the amine form of 2 4 D. For many years your secretary has enjoyed seeing healthy dandelions curl, stop flowering and finally leave only a hole in the ground where the root was. At no time were any flowers or vegetables damaged.

For weed control in your fruit crops get Special Circular 38, "1963 Chemical Weed Control for Fruit Crops—Apples, Grapes, Cherries, Raspberries, Strawberries," You can get it at your County Extension Office.

Directors' Meeting

The Wisconsin State Horticultural Society Directors will hold their summer meeting at the Waldo Orchards on July 9th. If you as a member have anything you want them to consider for the welfare of the fruit growers, will you get in touch with one of them? Their names were listed in the Feb. Newsletter. You may also send your request to your secretary.

A Message From Your Auxiliary President

As we begin our new magazine format, I am wondering just what material, ideas or recipes our readers enjoy receiving. Our Women's Corner or page can be whatever you wish it to be. Would you like to share household tips in addition to recipes? Do you enjoy little quips or bits of philosophy? We are open to suggestions and would welcome any ideas. You may send contributions to the editor.

Maybe you have favorite recipes—not apple—that you would like to share, especially when apples are not at their peak of flavor.

The Board of Directors of the Horticultural Society will be meeting at our home at 10:00 A. M. on July 9th to begin planning our next State Convention. Here again, ideas are welcome. Pass on any suggestions to any of the officers or board members. These were listed in the February Newsletter.

With summer fast approaching some of you may be able to use this recipe for making popsicles.

POPSICLES

1 pkg. Kool Aid
1 pkg. Jello (same flavor as Kool Aid)
1 cup sugar
2 cups boiling water
2 cups cold water
Freeze.

Fruit juice may be used with the jello instead of Kool Aid.

Last summer we made cider-cicles using plain apple cider frozen in dixie cups and inserting a popsicle stick as freezing took place. We gave them to the children when we held our blossom tours. They were a hit with the children but not quite so great with the parents because they were a little messy. Maybe some creative cook in our reading audience can come up with a way to make them with jello or gelatin to keep them from thawing so fast and becoming so "drippy."

I will close my comments with a quip Fritz often uses about the fruit growing business, "We Work for Mother Nature and get paid by Father Time."

Submitted by Mrs. Fred Meyer,
Waldo, Wis.

HAVE YOU any young energetic artists in your home? WHO PREFER the woodwork and walls to paper? It is reported that non-washable crayon marks on painted walls and woodwork can be removed by applying toothpaste to the marks and let set for five minutes. Then wipe off with a damp cloth or sponge. The toothpaste should not be left on long enough to dry as it will harden.

Have you these recipes in your file? Cape Cod Baked Apples; Autumn Apple Bread; Apple Potato Salad; Saturday Night Casserole; Sliced Baked Apples; Dixie; Topsy Turvey Apple Pecan Pie; Pork Chops with Jellied Apple Slices;

Cornucopia Apple Pie; Apples-On-The-Half-Shell; Deep Dish Apple-Date Pie? If not, enclose a stamped, addressed envelope with your request to your secretary. No charge for recipes or service.

New York Releases Three Apple Varieties

The Geneva Experiment Station has released three new apple varieties.

Niagara (Carlton X McIntosh) is a McIntosh type maturing two weeks before McIntosh. Its growth habit, productiveness, appearance and flavor are similar to McIntosh. Niagara has a slight tendency to drop as it approaches maturity. While this fault is not as serious as with McIntosh, a stop drop spray is reported to prove beneficial in most years. Trees reach full bloom about the same time as McIntosh. The other introductions, Wayne and Spigold, are both Spy types that have been introduced primarily to help supply processors with varieties that will produce a processed product similar to Northern Spy.

Wayne (NW Greening X Red Spy) is a dual purpose apple maturing about with Cortland. It is a very pretty apple, being solidly blushed and washed light scarlet with no striping. Trees are precocious, producing commercial crops within 5–6 years. It blooms late, about with Rome, and is a good pollinator.

SPIGOLD (Red Spy X Golden Delicious) is a high quality dual purpose apple maturing about with Golden Delicious. Trees are very vigorous (suggest propagating on dwarfing rootstock) and tend to be biennial bearers (suggest chemical thinning). Fruit reported to be very large and somewhat lacking in red color. Spigold is of no value as a pollinator and requires another variety for pollination. Trees of all three varieties are available from the New York Fruit Testing Association, Geneva, New York. — From Hoosier Horticulture Newsletter.

Wisconsin Strawberry Production

G. C. Klingbeil, Extension Specialist
Fruit Production
University of Wisconsin

The strawberry, most commonly known and grown in home gardens, is becoming a cash fruit crop of increasing importance to Wisconsin's agricultural economy. Preliminary figures of the Wisconsin Crop Reporting Service show 2,900 acres in 1962. The ten-year average (1950-1960) is 1,700 acres. Production in 1962 was 6.4 million pounds (about 4.5 million quarts) or 3,200 pounds per acre. In 1962 the crop had a value of 1.3 million dollars. This does not include income from plant sales. Increased production also means greater sales of boxes and crates, fertilizer and chemicals, and specialized machinery.

It is estimated that over 75 per cent of the acreage is harvested by consumers, commonly called the "U-Pick" or "Patch-Picking" method of harvesting and marketing. By this method the consumer is given the privilege of picking fruit and paying for it at a check-out location. Such a sales method requires good fruit in adequate quantity, suitable nearby parking, field supervision, necessary liability insurance, and a fair price. About 20 per cent of Wisconsin's strawberry crop is sold at wholesale and direct to retail outlets (this includes roadside markets). The wholesale, or shipping market, is largely from Door and Bayfield Counties. Less than five per cent of the crop is used for processing.

Strawberries are grown as a cash crop in nearly all counties in the state. Plantings vary from a few rows to more than 20 acres in size. Not many years ago most of the production was in several localized areas. With the increased interest in consumer harvesting, the acreage has decentralized.

I believe the acreage has increased as a result of the successful "U-Pick" harvesting system. Production per acre has increased as a result of:

1. Greater use of improved strawberry varieties. Most growers are planting substantially virus-free varieties recommended as a result of the Wisconsin Plant Improvement Program. This program had its beginnings at the Peninsular Experiment Station under Dr. F. A. Gilbert's supervision.
2. Greater use of fertilizer and irrigation. Experimental work at the Spooner, Hancock, and Sturgeon Bay Experiment Stations have encouraged this.
3. Improved weed control methods, both mechanical and chemical.

Prospective strawberry growers should carefully assess their potenial selling area and population before going into a sizable acreage for the "U-Pick" strawberry trade. Records show that a customers harvests an average of 20

quarts per visit to a planting and may travel 40 to 50 miles for a good picking. Usually customers come from a radius of 15 to 20 miles of a five to ten-acre established planting.

The know-how of growing strawberries is best gained through experience. It is best to start on a small scale and enlarge as demand increases.

Irrigation is necessary in that the hazards of frost during bloom and drought during the growing season are eliminated. Many growers have supplied nearby food markets with fresh, high-quality berries at a favorable price.

The Freeze in Florida

A Letter From Our Former Secretary

Dear Sid:

We appreciated receiving your News Letters. They keep us in touch with horticultural activities in Wisconsin, which was my life for thirty years. It doesn't seem possible, but we have now lived in Florida for over five years. However, we always enjoy coming back for the summer months to stay with relatives and visit friends.

Growing tropical plants has been an interesting hobby for us here. We have more than 120 varieties of trees, shrubs and plants and growing them, with many other activities, keeps us quite busy.

This headline appeared in our newspaper recently: DECEMBER FREEZE KILLED 14 MILLION CITRUS TREES. According to the Florida Citrus Manual, it will take six years to replace these trees. In this area, on the west coast, it is distressing to see entire groves of large orange and grapefruit trees appear to be dead. In the southeastern part of the state the damage was light and growers stand to profit from higher prices.

The city of St. Petersburg recently let a contract for dead tree removal for almost $300,000.00 Very large Banyan trees, said to have been brought here and planted in the 1880's appear dead. All the very large Australian pines are gone.

The beautiful flowering trees: Royal Poinciana, Jacaranda, and Orchid trees were destroyed. The mango and avocado; the hibiscus, croton and Bougainvillea which made the city so colorful in winter, were lost. However, replanting is going on and the tendency is to plant hardier kinds. Still we have replaced our hibiscus and crotons and several varieties of shrubs are coming back from shoots near the ground.

In some areas the temperature dropped to 18°; here the lowest was 22° F, the lowest ever recorded. In fact the lowest we have experienced at our place in five years was 37° F.

We extend greetings and best wishes to all members of the Society and the Wisconsin Apple Institute.

Mr. and Mrs. H. J. Rahmlow,
St. Petersburg, Florida

Minnesota and Western Wisconsin Annual Orchard Tour, Tues., Aug. 13, 1963

10:00 A. M. Meet at Stillwater Orchards, T. L. Aamodt and Thos. T. Aamodt.

12:00 Lunch at church in Stillwater, Minn.

1:45 Meet at Pine Tree Orchards, Arthur W. Jacobson.

Tours will cover: 1. Dwarf fruit tree plantings; 2. Thinning of fruit with NAA. 3. Sevin used at different rates and intervals after bloom. 4. Chemical treatments for control of fireblight. 5. Spring and fall herbicide treatments in the orchard.. 6. Soil treatments for control of suspected nematodes. 7. New packaging and retail sales areas. 8. Use of new test chemicals for orchard insect control. 9. Demonstration of new machinery and equipment.

If you do not live in western Wisconsin you are still welcome. More directions next issue. A splendid program!! It's nice to be invited.

Agricultural Chemicals Safety Code

1. ALWAYS read the label before using sprays or dusts. Note warnings and cautions each time before opening the container.

2. Keep sprays and dusts out of reach of children, pets and irresponsible people. Store outside of the home, away from food and feed, and under lock and key.

3. ALWAYS store sprays and dusts in original containers and keep them tightly closed. NEVER keep them in anything but the original container.

4. NEVER smoke while spraying or dusting.

5. Avoid inhaling sprays or dusts. When directed on the label, wear protective clothing and masks.

6. Do not spill sprays or dusts on the skin or clothing. If they are spilled, remove contaminated clothing IMMEDIATELY and wash thoroughly.

7. Wash hands and face and change to clean clothing after spraying or dusting. Also wash clothing each day before reuse.

8. Cover food and water containers when treating around livestock or pet areas. Do not contaminate fish ponds.

9. Use separate equipment for applying hormone-type herbicides in order to avoid accidental injury to susceptible plants.

10. ALWAYS dispose of empty containers so they pose no hazard to humans, animals or valuable plants.

11. Observe label directions and cautions to keep residues on edible portions of plants within the limits permitted by law.

12. If symptoms of illness occur during or shortly after spraying or dusting, call a physician or get the patient to a hospital immediately.

Questions and Answers

Q. Will dwarf apple trees stand our climate?

Ans. It has been my experience that semi-dwarf apple trees will stand the winter in the Cornell, Wisconsin vicinity. Extreme droughts are probably more troublesome than cold temperatures. This was our experience with the size-controlling root-stocks at the Spooner Experiment Station, Spooner, Wis. — G. C. Klingbeil, Madison.

Farm Labor Wages

Spring work begins on Wisconsin farms with farmers paying the highest wage rates on record for April, according to the Wisconsin Crop Reporting Service. Reports from Wisconsin farmers on April 1 indicated wages paid for hired workers averaged 2% above a year ago. Wages paid by the month averaged $210 with a house and $152 with board and room. Wages by the day averaged $7.20 with board and room and $9.10 without board and room. Hourly wages averaged $1.13 without board and room.

This year the number of workers on Wisconsin farms is 3% smaller than reported a year ago although there is a slight increase in the number of hired workers. March reports indicated Wisconsin's farm labor force included 23,000 hired workers or 1,000 more than a year ago. Family workers totaled 224,000 persons — a decrease of 9,000 persons from a year ago. Total employment was 247,000 persons.

When a retired man was asked what he did he replied, "I get up in the morning with nothing to do and by the middle of the afternoon, I'm through."

Cooperation and Advertising

The Minnesota Fruit Growers Association will provide forty bushels of apples and one hundred gallons of cider for the snack room during the annual convention of the National Association of County Agricultural Agents to be held during September in Minneapolis.

Health News

A reprint from the March, 1963 issue of the Virginia Medical Monthly, carries this opening paragraph, "Apple juice is shown to be better tolerated and accepted than orange juice by infants. This is especially significant since citrus juices are no longer necessary as a source of vitamin C." Help the babies as well as apple growers by being familiar with this six page report. Write your secretary if you want a free copy, enclosing stamped, addressed large size envelope.

Promotion Materials

It's time to get your supply of promotion materials ordered so they will be on hand when you want and need them. See the April Newsletter for the list of things and the prices. If you want another list, ask your secretary.

Psychiatrists say it's not good for a man to keep too much to himself. The Department of Internal Revenue says the same thing.

I always called a spade a spade, until the other day when I hit my foot with one.

Watch for children in the streets, especially those behind the wheels of oncoming cars.

Wisconsin Horticulture

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Wisconsin Fruit Prospects 1963

(As of June 12)

Marlon Schwier, Markets Div.
Wis. Dept. of Agriculture

The May issue carried our first report on the 1963 apple crop prospects. We stated at that time crop predictions were being made with an "if" situation. The "if" situation became a reality during the early morning hours of May 23rd.

As most of you know, a severe cold wave hit the Central Midwest area and temperatures plummeted. Many areas recorded temperatures in the 22-28 degree range and a few as low as 18 degrees. A call to several growers the following morning indicated the strawberry crop in the lower half of Wisconsin suffered severely, especially on those patches which could not be protected with irrigation systems or other means. Some damage was also reported in the northern half of the state even though the berries were not in blossom. Damage to the apple crop, at that time, was questionable.

Now, almost three weeks later, reports of the May 23rd frost are beginning to filter in and damage has been greater than anticipated. We have heard of apple losses ranging from 10 to 80 percent and in some pockets of an orchard 100 percent. What normally should have been a 1,600,000 to a 1,800,000 bushel year may have difficulty reaching last year's production of 1,400,000 bushels.

A visit in the Gays Mills area the first week of June indicates the early apple crop suffered little damage and the Dudley crop looks good. However, McIntosh and Delicious appear to be light. We have scattered reports from other areas and we hear damage occurred in the Trempealeau, Bayfield, and Door County areas as well as along the lake shore region. Adding to the woes of a fruit grower were the extreme wind storms during the first weekend in June. No doubt some losses occurred at that time also.

Wisconsin growers were not the only ones to suffer. We understand the Minnesota area production will be down considerably. A report from Indiana estimates their crop has been reduced an average of one-third to one-half from the May frost. Information out of Michigan is confusing, but severe losses have apparently occurred in that area.

Further reports will be coming in shortly, particularly from the National Apple Institute. Their annual convention is being held during the second week in June at which time they will make their annual "guestimate" report. A Federal report will be out in early July.

Apple Winter Injury at the Horticulture Research Farm, Arlington, Wisconsin

Malcolm N. Dana, Associate Professor of Horticulture

Early in 1960 the Department of Horticulture took possession of a new research farm two miles southeast of Arlington, Wisconsin. The farm is located on the Empire Prairie about twenty miles north of Madison and is one of a number of agricultural research farms in this area.

The first fruit planting to be made on this farm was an apple rootstock or-

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There will be a July issue this year — Advertisers please note.

chard. This planting was started in 1960 with additional plantings each year since then. In 1961 a small collection of varieties was established for evaluation of orchard characteristics of some of the new introductions.

The rootstock orchard was planned for three scion varieties; McIntosh, Red Delicious, and Yellow Delicious. Each variety was grafted to seven common size controlling rootstocks: M 1, M 2, M 7, M 9, MM 104, MM, 106, MM 109, and MM 111. The trees were set twenty-five feet apart in rows thirty feet apart. This spacing was chosen to allow adequate space for full development of each tree.

The orchard has been maintained under clean cultivation. No irrigation has been used. The first summer, 1960, was excellent for young tree growth, 1961 was an average year and 1962 was very dry, particularly late in the summer and fall.

The winter of 1962-63 produced severe cold for an extended period in January. Temperatures ranged to —30° F. on several nights during this season. The snow cover was light with a maximum sustained accumulation of about four inches. This remained on the ground until late March.

Winter injury to some trees was apparent in April. Additional trees have withered and died since then and others are showing symptoms of difficulty due to interference with water movement as a result of wood damage. A summary of the present damage is presented in the accompanying table.

Winter injury to apple trees. Number of trees dead of four trees of each combination planted.

Size Controlling Stock	Scion Variety		
	Yel. D.	Del.	McI.
Malling I	3	1	0
Malling II	0	1	0
Malling VII	0	0	0
Malling IX	2	0	0
Malling Merton 104	2	-**	-**
Malling Merton 106	1*	1	0
Malling Merton 109	2	1	-**
Malling Merton 111	1*	0	0

* Trees severely injured.

** No trees of these combinations planted.

It is obvious that Yellow Delicious was more subject to injury than were the other two scion varieties. This was expected. The stocks under McIntosh and Delicious apparently withstood the winter without serious damage. Final evaluation must await further seasonal development of these trees.

Adjacent to this stock's orchard a number of scion varieties grafted on seedling rootstocks were planted in 1961. Four trees of each variety were planted. The varieties were Prairie Spy. Lodi, Crandall, Macross, Franklin, Joan, Puritan, Blaze, Melrose, Delcon, Sanderson, and Red Melba. Of these trees there is complete top kill of four Blaze, two Crandall, two Prairie Spy, one Delcon and one Red Melba, and severe injury to one Prairie Spy and one Crandall. These trees will be observed for further manifestations of winter damage.

It is funny how all the countries with chips on their shoulders never have any to put in the pot.

Berry Growers

On June 9th, Albert TenEyck, President of the Wisconsin Berry Growers Ass'n prepared this report especially for the readers of Wisconsin Horticulture:

"The big question among Southern Wisconsin fruit growers is winter injury and loss as the result of the freeze May 23rd, and in the eastern part of the state, again on May 24th.

A brief check indicates that Chuck Thompson, Kenosha, saved most of his strawberries with irrigation on a 90 foot by 90 foot setting with the help of 15,000 feet of pipe borrowed from neighbors. His apples were apparently undamaged.

Vincents had severe winter injury to berries.

Jerry Hipp, Janesville, had little winter injury to berries, except Earlidawn. However, their engine blew a piston as it was started the night of May 23rd and it was 2:30 a. m. before they got the pump going. Much damage to the strawberries had occurred by that time. Hipp's apples on low ground have fruit left only in the tops, but apples on high ground have had to be thinned.

Apples at Jerry Flynn's, Milton, appear to be uninjured, though garden plants, including potatoes, were frozen off.

At TenEyck's, Brodhead, strawberries were badly damaged during the winter in spite of heavy mulch and the freeze May 23rd took practically 100% of buds, blossoms and berries except where irrigation water was applied from 11:00 p. m. to 9:00 a. m. Temperature at ground level reached 20 degrees. Apples on low ground at Brodhead were frozen solid and have dropped off, but on high ground the crop is good.

In general, the strawberry crop in southern Wisconsin will undoubtedly be short and the weed problem is severe due to a thin stand of plants and poor vigor.

Many apple trees were damaged by the winter cold, but most of them will recover. The crop should be nearly normal in spite of the May freeze."

In the Milwaukee area, near South Milwaukee, Herbert and Earl Mahn had some winter injury to berries but none to weeds. The night of May 23rd they irrigated from 10:00 p. m. to 8 a. m. applying one inch of water every 2½ to 3 hours. The next night they watered from 2 to 6 a. m. The berries were successfully protected. A few pints were harvested June 10th.

Near Hales Corners, Louis Koelsch found the temperature in his strawberry field to be 30 degrees at 8 p. m. May 23rd and ran his irrigation system from then until 10 the next morning. The next evening he started at 9 p. m. and stopped at 8:30 a. m. At his pump site the thermometer dropped to 18 degrees. Lou figures he applied 15 inches of water. He had trouble with a broken fuel line. Seems to hold true that troubles never come singly.

The National Apple Institute Reports

May 25, 1963—Frost hit Ontario crops.

Toronto: Severe early morning frosts this week caused losses among crops in Ontario, according to farm officials. Grape and strawberry crops were hit but it was not yet known what damage, if any, has been done to tree crops—cherries, peaches, apples, and plums.

Temperatures dropped to 22 degrees (F) in the Niagara Peninsula fruit belt and to 20 degrees in the Holland Marsh market gardening region north of Toronto.

When some of George Briggs' color slides were shown he said, "This shows my first wife and she says I'm her last husband." When asked whether he made any cider from his applies he replied, "Yes, we made some—the hard way."

Wisconsin Summer Orchard Tour

Extension Fruit Specialist, Prof. George Klingbeil has kindly made arrangements with three fine cooperators, for the summer tour to be held in the Richland Center area. While the program is not complete, the date of Tuesday, August 6th has been selected when visits will be made to the farms of Bill Louis, Roy Dingle and George Premo. Suggest that you now set aside that day to learn more about apple growing in Wisconsin. Tentative plans are to meet at 10:00 a. m. at George Premo's orchard, at 12:00 be at Roy Dingle's to see his storage and to eat our picnic lunch, then to Bill Louis' orchard for more good information. If enough members have paid their 1963 dues by that time, the Society should be able to furnish coffee and dessert.

Insects Good and Bad

One commercial fruit grower said, "Maybe some detrimental insects aren't so bad after all; if there weren't any, everybody could grow good fruit." Also, we must not forget the parasitic insects and the predator type which help control the destructive kinds. Natural control is truly a wonderful thing and might be satisfactory if we didn't like to eat so well and if we did not need warm clothing in the ever-changing Wisconsin climate. Speaking of clothing, a radio speaker recently remarked that the girls will wear more skin this year. When driving, better watch the road some too.

Speaking of balance did you know that termites would starve to death if it were not for another insect? It seems that the termites cannot digest wood, in spite of the large quantities they eat. Inside the termite is another living thing (it may not be a true insect) but it does digest the wood and then the termite digests the digester. Complicated—yes, but it works only too well.

There are many ways for a new insect to get started in Wisconsin. We have been warned many times about deliberate sabotage. If, therefore, you see an apparently new insect, put it in a small bottle—a little rubbing alcohol will preserve it—and take it to your County Agricultural Agent. If he does not know what it is he will get it identified for you. This could save you, your neighbors, and thousands more from serious losses in the future.

What Is The National Apple Institute?

(Condensed from "The Mountaineer Grower," December, 1962)

National Apple Institute is of, by and for GROWERS solely. This alone gives it a special appeal—with Congress, before the Departments, with editors and news agencies. NAI's offices are in Washington, D. C.; a full-time set-up under James B. Moore, Executive Secretary. Membership is by states, or groups of states, only; no individual grower members. Directors are one for each member state, elected by that state's growers. The budget now runs $125,000 to $150,000. Each member-state's pro rate is based on an average of its crops, thus shifting slightly, year-to-year.

Thirty-two states are members of NAI this year.

The Institute's work is in the channels proven effective by trial-and-error in almost a quarter-century's experience. The main work-channels are: —

IN PUBLIC RELATIONS, the Institute's work divides mainly into two channels: with youngsters through the schools, and with the public through The Apple Kitchen. For the schools, NAI has (1) the movie "Gateway to Health" with over 700 prints in circulation; said to have the greatest acceptance by school people of any film in the huge school field; (2) film-strips

and accompanying pamphlets for 3 age-groups, primary, elementary and junior high; (3) teaching unit posters for the same groups; (4) "Nature's Toothbrush" buttons and certificates.

For THE PUBLIC, NAI's Apple Kitchen does an outstanding job; has developed a full-color "mat" layout of apple dishes which, constantly renewed, The Apple Kitchen supplies free to the larger dailies of the nation, with remarkable usage (57 dailies during the 1961-2 season); plus the usual black-and-white "mat" services; plus special work for the national magazines, radio and TV. A careful check indicates that over 40 percent of all printed apple publicity in the U. S. during the 1961-2 season stemmed from The Apple Kitchen!

WITH GOVERNMENT, the Institute's work can seldom be set down in cold type. Alertness, information and persuasion are the main tools with Congress and The Departments. An outstanding example, now safely past, was the threat to apples at the time of the cranberry spray-residue tragedy. The same disaster to apples was averted only by the exceptional work of NAI in locating apples that had been treated with the chemicals involved, and proving to the Food and Drug Adm. and Dep't of Agriculture that apples were not involved. Watching for new bills, laws and regulations, and providing information to Congressmen, Congressional committees and the growers is a month-by-month job.

RESEARCH is an NAI field in which the work is more visible. The Institute is working with some success toward a balanced, continuous program of research into apple unknowns, mostly in the marketing side.

The MARKETING DIVISION of NAI in the past 3 years has developed—and is improving—a system of telephone and mail reports among apple salesmen nationally which is a long step toward closed team-work; toward less blind price-cutting among apple salesman. The set-up gives the salesmen the "feel" of the markets, along with the price-levels and volume of movement, in ways which the U. S. Market News Service by its nature can not supply.

A nationally-respected firm of 'efficiency experts,' Boos, Allen and Hamilton, is now conducting for NAI a comprehensive examination of apple marketing in the U. S., searching for correctible weaknesses.

NAI carries the main financial support of National Apple Week, the annual mid-October affair which enlists the Distributors, wholesale and retail, in a united effort on apple-selling.

(From Minnesota Fruit Growers Association)

Are You a Promoter?

Now is the time to get your supply of bumper strips. They are only $1.00 for ten, postpaid. It will soon be time to start using them.

That pretty red apple tie clasp you should wear nearly every time you appear in public. 75¢ for one, $2.00 for three, or ten for $6.00, postpaid to you. How is your supply of the attractive RECIPE BOOKS—'Apple Lover's Guide to Good Eating.'? If you mislaid your order blank, write for another.

BILLBOARDS, BILLBOARDS — Order the number you want, state imprint wanted if any, and arrange with the proper party for the place to put it.

Apples are growing—all should be swallowed, solid or liquid, by people. You have them to sell, tell the people, tell all the people.

If you think advertising does not pay, it is very apparent that a lot of people do not agree with you. There is a saying something like 'He who tooteth not his own horn, shall not have his horn tooted.' One way or another, let's toot the fruit growers horn loud and long.

In the days when the woodshed stood behind the American home, a great deal of what now passes as juvenile delinquency was settled out of court.

How a Pesticide Is Produced

From National Agricultural Chemicals Association

How a product is researched and produced has a lot to do with the kind of product it turns out to be. Here is what happens before a new pesticide goes on the market:

1. Market analysis to determine if a new chemical is needed. Only if it is needed will a company spend time and money on research to produce it.
2. Synthesis of 300 to 2000 compounds which might come close to doing the job which needs to be done.
3. Preliminary biological screening to find out if the compounds will control a particular pest.
4. Select 10 to 50 of the most promising compounds.
5. Synthesize 50 to 500 grams of each compound for further testing.
6. Run a second biological screening.
7. Test the compounds for acute toxicity to animals and humans to establish safeguards during further testing.
8. Start testing for toxicity to plants. Eliminate chemicals which damage desirable plants.
9. Make preliminary patent application.
10. Work up preliminary processing and cost factors for producing the chemicals.
11. Select 1 to 6 of the compounds.
12. Synthesize 25 to 100 pounds of each.
13. Start testing compounds under field conditions.
14. Start long range toxicity tests. Tests may last two to three years.
15. Conduct preliminary tests of effect on taste and quality of crops.
16. Sample residues left on or in crops.
17. Register selected chemicals for experimental sales.
18. Begin studies on how to formulate the chemical for final sales.
19. Start pilot plant construction for one selected chemical.
20. Study processing and plant design.
21. Do advanced field testing on many crops, in different parts of the country, under different weather conditions.
22. Make analyses for residues, if any, left in or on food crops.
23. Conclude toxicity tests.
24. File application for registration of pesticide with the U. S. Dept. of Agr.
25. File petition with the Federal Food and Drug Administration for tolerances, if any, for chemical residues on various food crops.
26. Build manufacturing facilities.
27. Select packaging and labeling and set prices.
28. Print sales and technical literature.
29. Conduct application research to discover all possible crops and pests for which the new pesticide can be used.
30. Continue market studies and advertising.

This research and development takes three to five years and costs $500,000.00 to 2.5 million dollars or more. Hundreds of highly skilled and experienced scientists are involved. Scientists in government and agricultural colleges and universities double check scientists in industry. Scientists in the field double-check scientists in the laboratory.

Before the pesticide goes on the market, the manufacturer must prove with voluminous scientific evidence that the chemical is useful, that it will be safe to use, and that it can be used in growing, storing, or transporting food crops without ANY hazard to the consumer when used as recommended.

Apple Growers of Wisconsin

NOW IS THE TIME FOR ALL GOOD PEOPLE WHO GROW APPLES TO COME TO THE AID OF THEIR WISCONSIN APPLE INSTITUTE.

If you raise apples in the State of Wisconsin for sale, then you are a commercial apple grower, and thereby privileged to belong to the Wisconsin Apple Institute. Joining the Wisconsin Apple Institute automatically places you on the membership list of the National Ap-

ple Institute and the benefits in sales aids alone is worth more than the cost. According to our secretary there are over one thousand eligible growers in this state, and we are far short of this goal in dues received by the Wisconsin Apple Institute.

Let's all support our own organizations; the Wisconsin Apple Institute and along with it the National Apple Institute. We can all promote and sell Wisconsin's fine apples so much better with the assistance of our State wide organization. This letter is to remind you that if you have not already done so, send to our secretary your $10.00. If you believe in self help, and want a good promotional organization, both research and marketing wise, now is the time to support it. Make checks payable to Wisconsin Apple Institute—$10.00 is the amount. Send checks to Wisconsin Apple Institute, 1542 So. 82 St., West Allis 14, Wisconsin.

Sincerely,

Dues and Membership Committee
Don E. Rawlins, Chairman,

Weed Control Experiences Wanted

Weeds, weeds, weeds — quackgrass, Canada Thistle, bull thistle, field bindweed and it seems a million more always giving trouble. Recently, however, weed-killing chemicals have proven very beneficial. So here is an excellent suggestion from Edward C. Stry of LaCrosse, Wis. "I should like to see experiences on weed control (particularly quackgrass) among real young trees and shrubs—such as Simizine, Amitrol T, etc." Without a doubt many of the members of the Wisconsin State Horticultural Society have used a number of the weed killers and can help not only Mr. Stry but many more as well by telling their experiences—good and bad —particularly as it relates to the orchard and use around shrubs. Would YOU like to help? Perhaps this outline will help get the essential details: 1. Chemical used; 2. Rate of application and strength if available in different forms; 3. When applied; 4. Approximate temperature; 5. Weather following—rain, cold, dry; 6. How applied —hand sprayer, orchard sprayer, sprinkling can, etc.; 7. How did you determine rate of application; 8. How successful; 9. Any damage not intended; 10. What do you want to know about weed control?

Since tomorrow never comes, why not write your report today and mail it to the editor of Wisconsin Horticulture?

The Wisconsin Apple Institute

This organization is made up largely of a group of Wisconsin Apple Growers who want to help not only themselves but others in the same business. These others may be in Wisconsin or in many of our other states. The Wisconsin Apple Institute is a helping part of the National Apple Institute which is continually telling the public of the healthful benefits of eating apples and apple products. All of this helps make a better market for your apples. Isn't it really your duty, then, to be a member of the Wisconsin Apple Institute? A letter to the editor will bring more information.

Sturgeon Bay Strawberry Meeting July 1, 1963

Dr. Frank Gilbert, Superintendent, University Experimental Farm, Sturgeon Bay, has provided this information so you can learn why you should go if you can.

Place: Peninsular Branch Experiment Station.

Time: 10:00 a. m., Monday, July 1, 1963.

Lunch: Bring picnic lunch. (There are several eating places in Sturgeon Bay.)

Subjects to be covered:

1. "Primarily we are going to look at the varieties being grown and compare them with my new selections. These selections have looked very good and there is a possibility that one or two might be named in the near future. I'm looking for grower opinions with regard to these selections."
2. Effects of irrigation for frost protection.
3. Insect and disease discussions.
4. Observation of seedlings (approximately 2500 different clones).
5. We hope to have a rather large display of machinery.
6. Interested growers will be able to look at our dwarf apple planting, cherry weed control, cherry nutrition, and raspberry weed control.

Your editor adds—take a look at the vigor of the virus free raspberries.

Exchanging Ideas and Experiences

Friendly visits usually benefit both parties. Here is another opportunity for some. A group of Indiana orchard men will do some visiting during July and Thursday, July 18th in the forenoon will be at the Thompsons' orchard, where Chuck will show them his operation and Prof. George Klingbeil will assist in making our neighbors welcome. It would be nice to have a group of Wisconsin apple growers there too. Shall we go? Also a further opportunity to visit with these men will be the preceding evening, when they will be at the Waukegan Inn, at Waukegan, Ill., about ten miles south of the state line.

The Thompson Orchards are on Co. Trunk E, east of Somers and of Hwy. 31 in Kenosha Co.

ANNUAL ORCHARD TOUR

Minnesota and Western Wisconsin
Tuesday, August 13, 1963

Cooperating agencies:
Minnesota Fruit Growers Association
Wisconsin State Horticultural Society
Stillwater Orchards & Pine Tree Orchard.

10:00 a. m. Meet at Stillwater Orchards, T. L. Aamodt. From Stillwater, ½ mile west of Jct. Hwy. 212 & 36, on 36. Watch for signs.
From Twin Cities: 6 miles east of North St. Paul on Hwy. 36. Watch for signs. Welcome; Victor Leidel, Pres. Minnesota Fruit Growers Ass'n. T. L. Aamodt, Stillwater Orchards.
Orchard Tour: See features listed below.

Noon: Lunch at First Methodist Church, Stillwater—813 W. Myrtle St.

1:45 p. m. Meet at Pine Tree Orchards, Arthur W. Jacobson.
From White Bear Lake: 3 miles east on Hwy. 96—watch for signs.
From Stillwater: 7 miles west on Hwy. 96—watch for signs.
Welcome; Arthur W. Jacobson.
Orchard Tour: See features listed below. Refreshments: Courtesy of manufacturers and suppliers.

Features:

A. Dwarf fruit tree plantings (1) and (2).
B. Thinning of fruit with NAA and Sevin at various rates (1) and (2).
C. Limb and trunk scoring to increase fruit bud formation (used prior to fruit bud differentiation in 1962) (1).
D. Spring and fall herbicide treatments

in the orchard (1) and (2).

E. Treatment for control of suspected nematodes (treatment with nematocides) (2).

F. Various spacings and delayed planting of fillers (1) and (2).

G. Use of new test chemicals for orchard insect control (1) and (2).

H. New packaging and retail sales areas (1) and (2).

I. Chemical and equipment displays and demonstrations (1) and (2).

(1) Indicates Stillwater Orchards.

(2) Indicates Pine Tree Orchards.

Secretary Sid Says:

Every fruit grower should have a good magnifying glass. Good does not mean a two or three power glass. A ten-power folding type available many places, can easily be carried in a pocket, and is sturdy enough to be useful many years. Many times I have asked growers to look at a leaf and to tell me what they saw. Some would say it looked like some dust on the leaf, but when shown how to use the ten-power glass and then looking they would actually pull their heads away from a high population of red mite eggs. Others could hardly believe their eyes when they would see 8 or 10 thrips on a raspberry blossom. The aphid in spring and summer is ovoviviparous (it produces an egg with a cover within its body which hatches within the body so is born alive and ready to start eating). It is easy to watch with a ten-power glass. Even with a ten-power glass, it's not easy to see the cyclamen mite on strawberry leaves.

When you count 100 to 175 red mite eggs on a single apple leaf and see several of the adults busy doing the laying, you know much better how to plan your spraying program. Look at several apple blossoms closely—you'll appreciate nature more and it helps get the youngsters more interested.

Please don't think I am joking about the number of red mite eggs. I have seen that many and more lots of times and one of them was May 31, this year.

If you have such a glass, your secretary would like to report to others how you use it. Please write your experiences so they may be passed along to others.

For real savage satisfaction, watch a lady beetle larva pick up an aphid and suck the body fluid out of it. Even better is to watch the pump action of the syrphus fly larva as it takes about a minute to make a plump aphid very flat.

CONSTANT SURVEILLANCE REDUCES CROP LOSSES

The old saying, "A moth eats nothing but holes," just doesn't hold true, says A. R. Kurtz, Chief of the Plant Industry Division, Wisconsin Department of Agriculture. It has long been the rule of thumb that insects in most years destroy about ten per cent of the crops, and in some years, and in some areas, this figure may be much higher. In order to keep this loss as low as possible, entomologists in the Division maintain a constant surveillance of the crops and nurseries in the state. "We have had to pay particular attention to our ports since the opening up of the St. Lawrence Seaway," says Kurtz, "for we have no idea what damage could result from many insects found aboard ships from other areas of the world."

A cooperative effort between the Plant Industry Division, University of Wisconsin staff, Plant Pest Control of the U. S. D. A, Conservation Department, County Agents, and canners, as well as with many other individuals and agencies, has resulted in a good coverage of the insect conditions in the state. The Division's Entomology Section, headed by Philip W. Smith, correlates and compiles this information into a comprehensive weekly report used both

statewide and nationally.

Through the Cooperative Survey Program, the Division is expanding its insect reference collection as an aid in identifying insect species of economic importance found in the state.

Smith, in commenting on this activity, emphasized that reports from many sources are helpful in safeguarding our agricultural industry against new pests which have not yet been established in Wisconsin. Some of these pests in neighboring states which could be a problem are the Japanese beetle, the gypsy moth, and the cereal leaf beetle. Two others which could be of particular concern to Wisconsin agriculture are the alfalfa weevil and the khapra beetle.

Entomologists also keep a close watch on established insects such as the greenbug, grasshoppers, and army worm, and cankerwarms, but if conditions are right, the pea aphid, the European corn borer, and cutworms can be very damaging.

Insects

There are more insects in the world than any other living thing. They outnumber people 500,000 to 1. As world population and that of the United States increase, the competition with insects and other pests for available food and fiber will become more intense. To maintain the kind of life we desire, we must continually improve our ability to control pests.

The answer is more research. Today an estimated total of nearly 100 million dollars is spent by federal and state government agencies, colleges, and universities, and the chemical industry to learn more about the lives and appetites of insects and other pests; to find biological and cultural controls; to develop better chemicals and means of application.

Every means of pest control must be vastly improved if we in our old age and our children in their lifetimes are going to be able to eat and live as well as we do today.

Wisconsin Licensing and Bonding Law

The Wisconsin Licensing and Bonding Law, Senate Bill 537S, introduced in the present Legislature affecting potato and apple buyers has been recommended for indefinite postponement by the Joint Committee on Finance. The chances for passage in this session are very limited.

Food Production

Agriculture is divided into three main areas:—

The era of manpower and animal power was an era of major crop failures, plagues, and famine. At the end of that ages-old era, around the year 1820, a farmer, working 12 to 14 hours per day, was able to produce enough food and fiber for himself and three others. During the 1800's came the era of farm mechanization and productivity went up. By 1900 one farm worker could produce enough for himself and six others.

Today we are in the chemical age of agriculture. By 1940 one farm worker could produce enough food and fiber for himself and nine others. With the wide spread introduction of new pesticides and fertilizers, and with other scientific advances, production shot up. Today one farmer can produce enough for himself and 26 others. Farm experts agree that we have made more progress in food production in the past 30 years than in all the previous years of man's history.

In a recent report, the Food and Agricultural Organization of the United Nations said that the single most important thing that under-developed countries can do to increase needed food production, is to expand the proper use of pesticides. These chemicals alone are enough to spell the difference between starvation and survival for millions of people.

STRAWBERRIES — SEASON OF RIPENING

Peninsular Branch Experiment Station
Sturgeon Bay, Wisconsin **1962**

Variety or Selection	Calculated Yields * (Qts./Acre)	% of Fruit Ripe June 21-30	July 1-10	July 11-23
Earlidawn	4601	70	30	0
Md. - U. S. 2590	4510	66	34	0
Dunlap	3911	61	39	0
Md.-U. S. 2601	6525	43	57	0
Redglow	5046	42	58	0
Pocohontas	3530	37	63	0
Surecrop	5107	36	64	0
Wis. 5837	7187	35	65	0
Wis. 5813	7042	32	68	0
N. J. 557	6035	28	72	0
N. J. 457	5635	36	60	4
Wis. 5839	4683	11	89	0
Wis. 5815	6855	5	95	0
Wis. 5841	7741	21	74	5
Catskill	7003	22	72	6
Wis. 5823	6869	8	84	8
Wis. 5829	4211	18	73	9
Wis. 5817	5445	10	80	10
Sparkle	7145	10	77	13
Robinson	7048	16	68	16
Wis. 5828	8531	10	66	24
N. J. 357	5055	0	85	15
Wis. 5832	6507	0	71	29
Wis. 5827	10273	0	70	30
N. J. 257	5735	0	68	32
Wis. 5831	9066	0	59	41
Jerseybelle	4438	0	51	49
N. J. 157	6706	0	46	54

* Yields calculated from 6 replications of 2 row plots with 5 plants per row. Each quart or portion of a quart weighed and yieid figures based on 22 oz. per quart.

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Summer Orchard Tour

G. C. Klingbeil, Fruit Specialist

The annual summer meeting and orchard tour of the Wisconsin Horticultural Society will be held Tuesday, August 6, in the vicinity of Richland Center, Wisconsin. John Wilson, Richland County Agricultural Agent, and G. C. Klingbeil, Extension Specialist in Fruit Production, are working with the society on program and arrangements.

The tour will officially begin at 10:00 A. M. at the Premo Orchards. At this location an informal discussion will be conducted on the subject of tree size-controlling rootstocks. Mr. Premo has 1,500 five-year old Red Delicious, McIntosh, and Cortland on M VII and M II rootstocks. To get to the Premo Orchards, follow County Trunk Q and Y west from United States Highway 14 (Q and Y (Seminary Street) cross Highway 14 at the Shell Oil Station). Follow County Trunk Y past the Richland Country Club to a gravel road about one mile. This is the entrance to the orchard.

The second stop will be noon at Sunset Orchard, operated by Roy Dingle. At this location facilities will be provided to eat your picnic lunch. Each group or family will bring their own. The dessert, coffee, milk, and soft drinks will be provided. Mr. Dingle has a young orchard planted on the contour, but the main item of interest is his new 10,000 bushel storage and packing house.

The afternoon stop is at the Oakwood Orchard operated by Bill Louis and Son. At this stop you will have an opportunity to see chemical weed control results, plantings of dwarf trees, bearing grape and cherry plantings, and other items of interest. Mr. Louis is very interested in packing and bagging and has invited all growers and others to take part in a discussion on this at his packing house. Bring samples if possible.

No machinery and equipment demonstrations will be conducted at this year's tour.

Apple Crop Prospects

Marlon Schwier, Wis. Dept. of Agr.

Optimistic and pessimistic reports are being heard regarding the Wisconsin apple crop. Some growers feel the crop will equal or better last year's figures, while others definitely feel it will be lower. Probably by the time you read this report you will have had a chance to see the first USDA apple forecast report which is scheduled to be released July 10. Certainly this will give some indication of what to expect this year.

Latest reports indicate Wisconsin can expect a fairly good crop of early apples. This crop seemed to have escaped the severe frost damage and has made good progress despite serious drouth hazards in many areas. The mid-season and late varieties are very sporadic. Bayfield and Door Counties and the Menomonie area are reporting near normal or better than normal crops. Other areas, as in the last report, continue to vary with some being up and others down. Certainly 1963 crop predictions will go down as one of the hardest to predict in many a year.

Nationally, the picture looks about the same. Some areas are reporting average to above average crops, while others forecast a lighter production. One thing is sure, however, and that is within another month or so the harvest will be underway and the guessing game will have ended.

WISCONSIN HORTICULTURE

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Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

S. S. Mathisen, Editor, 1542 So. 82 St., West Allis 14, Wis. Phone—BL 8-1755.

Billboards Help Sell Apples

The time is at hand when the billboard posters should not only be ordered but directions given as to the imprinting desired. Here may be some answers to questions you may have about this advertising medium. You arrange for the poster space on a billboard which suits your situation. These billboards themselves are 25 feet by 15 feet. The size of the apple poster is 19' 6" long by 9' high. It is made in sections—eight of them. Each is 61" x 54". After these are applied to the billboard, the operator puts a white border around the outside edges of the poster. The background is yellow, the five foot apple and message ENJOY WISCONSIN APPLES are red, the musical scale and words "Meal Time Any Time" in black, and the Wisconsin Apple Institute trade mark is in lower left-hand corner. This leaves a space of sixteen feet by twenty-one inches for the imprint (directions to your orchard). The charge for the imprint is $2.50—but remember— more words — smaller print to get it on. The price of the poster to members of the Wisconsin Apple Institute is $8.00 and to non-members $12.00, plus transportation. No extra charge for the green leaf on the apple stem. Orders are to go to your secretary.

New Regulations For Processing Fruits and Vegetables

The following is from the Federal Register of June 13, 1963.

"This notice is to advise prospective bidders of sanitation requirements for plants operating under purchase contracts awarded on or after July 1, 1963, by the Fruit and Vegetable Division, Agricultural Marketing Service, United States Department of Agriculture (hereinafter referred to as FV, AMS, USDA), for any of the following products: canned, dried, dehydrated, and frozen fruits and vegetables and their products, olive oil, honey, and peanut butter."

Since this covers Premises, Buildings, Sirup and brine rooms, Ventilation, Lighting, Water supply, Waste disposal, Equipment, utensils, and food containers, General housekeeping, Toilet facilities, Storage facilities, Control of insects, birds, and animals, Plant operation, and Plant personnel—those interested should write to Director, Fruit and Vegetable Division, Agricultural Marketing Service, U. S. D. A., Washington 25, D. C. and request a copy of the complete new regulations.

Fruit Situation

The following brief report is from the publication FRUIT SITUATION from U. S. D. A. released June 27, 1963.

"Production of deciduous fruits in 1963 is expected to be smaller than in 1962 and below the 1957-61 average. This outlook comes on top of a reduced 1962-63 citrus crop and generally unfavorable prospects for the 1963-64 citrus crop. Thus total production of fruit in 1963 is expected to be the lightest in several years. The 1963 deciduous crop should bring generally higher prices than the larger 1962 crop. Supporting this prospect are lighter remaining stocks of canned fruits, some at ad-

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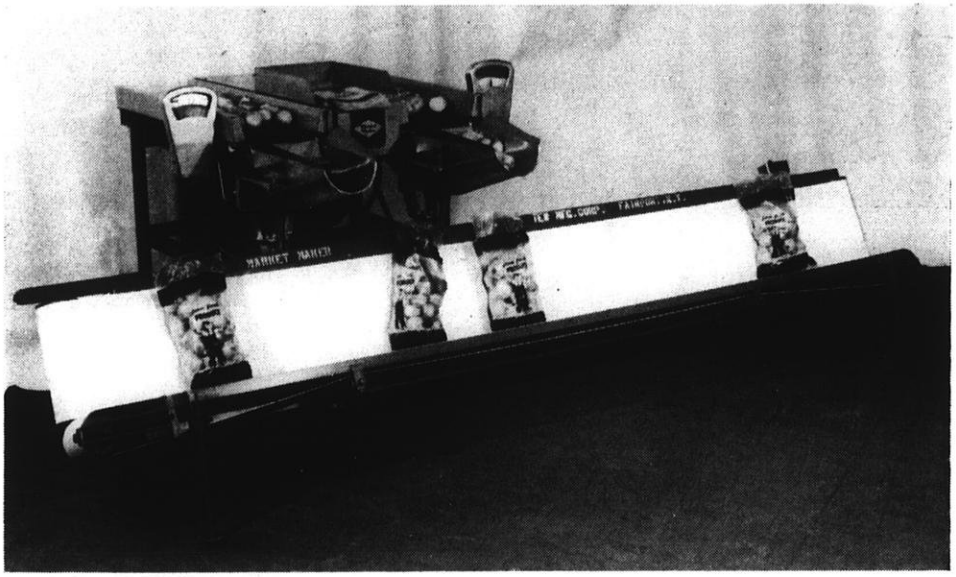

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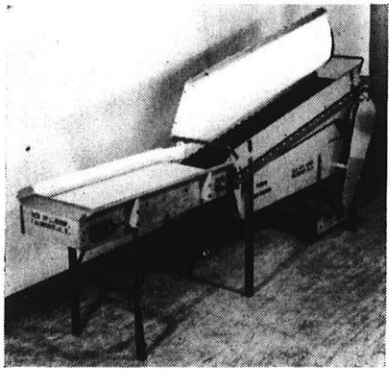
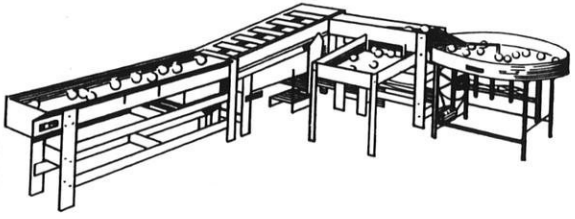


Apple Polishers



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vancing prices, and expected rising consumer incomes. Prices for fresh and processed citrus fruits are continuing at higher levels than a year ago.

Deciduous fruit crops expected to be larger in 1963 than in 1962 are apricots and California plums. Crops expected to be smaller are peaches, pears, sweet cherries, sour cherries (western states), prunes, nectarines, and strawberries. June 1 indications for apples pointed to a smaller crop in 1963. In California, weather conditions for grapes have been favorable and production of Thompson Seedless is expected to be up this year. But in eastern states, growing conditions for grapes have been unfavorable. Development of 1963 fruit crops has been hampered by cold, wet weather this spring in some western states, and by May frosts in many North Central and Northeastern States."

In 12 sour cherry producing states, a 1963 yield of 78,890 tons is indicated compared to the 1962 yield of 196,740 tons.

The 1963 commercial crop of strawberries in the United States was estimated as of June 1, at 492 million pounds, 5 per cent below the 1962 crop and 3 per cent below the 1957-61 average. Acreage for harvest in 1963 was reported at 89,680 acres, down 6 per cent from 1962. Yields per acre were expected to be up about one percent. Prices received by growers for fresh market strawberries in May averaged moderately higher (on a national-average basis) than in May, 1962.

An important factor in prices for U. S. strawberries for freezing is the supply of Mexican frozen strawberries available for movement to the United States. Imports during January through mid-April 1963 have been about 21.2 million pounds, nearly a fourth larger than in the same period of 1962."

Middle Age — the period in a man's life when he has more on his mind but less on his head.

The Flower Garden In Midsummer

L. M. Berninger
Extension Specialist
Commercial Floriculture

Dahlia plants should be supported to prevent their blowing over in late summer-early fall. Continue to tie the shoots to the main stalk periodically through July and August.

Allow only one bud to develop on each shoot if you are interested in obtaining extra large flowers. Remove all side buds before they become too large.

A feeding with a complete fertilizer can be made in mid-July. The material can be broadcast around the plant and watered into the soil.

The soil can be cultivated approximately once a week up until the time the buds appear. A mulch of marsh hay or straw or peat can be used during the summer months to conserve moisture and control weeds.

Late flowering lilies that have a tendency to grow rather tall may also have to be supported. Tie the stems to the stake periodically to prevent the lilies blowing over in late summer.

Be on the lookout for leaf spot problems on chrysanthemums. Dark brown to black spots will develop on the lower leaves. The disease may progress on up the stem and can result in the loss of most of the leaves by early September. A fungicide such as Zineb or Captan can be used to control this problem. Good air circulation is quite desirable to avoid problems with this disease organism.

Gladiolus plants may start to turn yellow and die in mid-summer. This situation may occur before the spikes have had an opportunity to develop. A disease known as fusarium yellows may be responsible for this situation. The disease may over-winter in the soil or have been present in the corms before planting. Diseased plants should be destroyed. It will be necessary to plant

in a new location next year and to plant only disease free corms that have been treated with a fungicide.

Information on the control of this problem can be obtained from Dr. Earl Wade, Extension Plant Pathologist.

Thrips are a major insect problem in gladiolus. This pest attacks not only the foliage and flowers but will overwinter on the corms. The flowers may become misshapen and discolored and at times may not open. You may obtain control by applying DDT approximately every week throughout the entire growing season. The corms must also be dusted with DDT before being put in storage.

Iris can be divided from mid-summer on through early fall. This perennial should be divided approximately every three to five years. Leaves can be cut back to one-third their full height. Lift the whole clump of rhizomes out of the soil and wash away most of the soil with a steady stream of water. Cut the rhizomes apart being sure that each division has at least one fan of leaves.

This is also a good time to check for problems with Iris borer and rhizome rot. The iris borer enters the plant in the springtime and bores its way down into the rhizomes. Soft areas of the rhizome should be discarded.

Cover the rhizomes with approximately one inch of soil. Rhizomes can be planted in a triangular pattern leaving approximately 15 to 18 inches between each section.

Don't Count on Dry Weather To Control Apple Scab

Earl K. Wade,
Extension Plant Pathologist

With the dry weather conditions that have prevailed so far this season, some growers are apt to allow their fungicide spray schedule to fall by the wayside, figuring perhaps that the lack of moisture will reduce the chances of scab development and spread. I would like to point out, however, that both primary and secondary scab infections were found during the first week in June in some orchards in the state where little or no spraying had been done.

During the dry periods it is possible to reduce the number of fungicide spray applications and still have a scab-free orchard. However, to be successful with a reduced spray schedule, a careful record must be kept of rainfall (wetting periods) and air temperature and a knowledge had of their relationship to the life cycle of the apple scab fungus. In addition, an effective scab fungicide must be used. A grower who stops spraying merely because he thinks he has no scab infection in his orchard and that it is too dry for any infection to take place is generally asking for trouble.

Briefly, here is what one should know about the life cycle of the scab fungus in order to attempt to operate on a reduced spray schedule during period of dry weather and still have scab-free fruit at harvest time.

Primary Cycle

Fungus overwinters in diseased leaves on the orchard floor. In late winter perithecia (fruiting structures) develop in these leaves. At about bud-break (depending somewhat on weather conditions), ascospores (primary spores) begin to mature in asci (sacs) inside the perithecia.

With sufficient moisture to thoroughly wet the leaves on the ground, the mature ascospores are released, and wind and air currents carry the spores to susceptible tissue (new growth, such as bud-breaking dormancy).

Ascospores continue to mature over a period of time in the perithecia in the leaves. They are released with each rain. In fact, these primary spores mature and are released over an extended period starting early in the spring and ending several weeks after petal fall.

Moisture must be present for several hours before a spore can produce a

scab infection. The period of time for infection to take place varies with the air temperature. (See table 1, as reported by G. W. Keitt, Univ. of Wis.).

TABLE I. Minimum hours of continued wet foliage required for primary scab infection at different temperature ranges.

Average air temperature during wet period	No. hrs. continued wet period required for primary scab infection
42° - 43° F.	14-18 hours
48° - 49° F.	11-13 hours
59° F.	8.5 hours
68° F.	4-6 hours
75° F.	4-6 hours
79° F.	8-10 hours

It is seen from Table 1 that up to a certain point, the length of the wet period required for primary scab infection decreases as the temperature increases. Ascospores can be discharged at the temperature of melting ice, and infection can take place at between 32-35° F. if there is a continued wet period of at least 48 hours. These spores can also stand brief periods of drying and exposure to direct sunlight during the early stages of infection.

Secondary Cycle

On contacting the wet young leaves and fruit, the ascospores germinate, penetrate the tissue and send out a thread-like growth called mycelium. Structures or short upright stalks called conidiophores develop on the mycelium, upon which are borne the summer spores, called conidia. These conidia start the secondary, or summer, cycle of scab infection. Uunder certain conditions it is possible to have the primary ascospores and the secondary conidia released simultaneously.

The time required for conidia development also varies with the temperature. The infection period (when spores contact leaf surface to time when infection can be seen) varies from 7-14 days. For example, at between 30 - 40° F. the infection time is at least 18 days, while at 65 - 70° F. the time is reduced to 8 days.

Conidia are well attached to the stalks or conidiophores and require a certain amount of moisture for release. They are carried and spread by rains and dew, and account for most of the spread of infection on individual trees. At first, it takes a somewhat shorter time for these summer spores to produce an infection as compared to the primary ascospore infection. However, as the season advances the length of time for infection to take place can increase considerably. This is due mainly to the fact that both fruit and foliage become increasingly resistant to infection as they mature. An exception is the undersides of the leaves which remain somewhat susceptible to infection throughout the season. However, development of the fungus both on the leaves and on the fruit late in the season often is so restricted that individual lesions are not easily seen or recognized. This is why your apples may appear to be "scab-free" at harvest time and yet develop "pin scab" in storage.

It is evident that there will be many secondary cycles or crops of spores produced during the summer unless the fungus is controlled by adequate spraying with a good fungicide.

Even a casual study of the life cycle above shows a very important part of an effective apple scab control program is **thorough** and **timely** fungicide spraying during the primary cycle. Poor control of the primary infection results in the need for extra spraying after petal fall and late in the season to keep the fruit fairly free from scab. Applications can be based on a more or less set schedule of a 7 day interval up through petal fall followed by 10 day cover sprays, or by rainfall (wetting periods) and prevailing air temperatures. Because of the dry weather that has occurred so far this season, a grower would have reduced his number of

spray applications by following a rain period-temperature schedule. The type of fungicide used is of prime importance when a reduced schedule is followed, even though based on adequate rainfall-temperature data.

There are at least 4 types of chemical fungicide sprays for scab control: (1) protectant, (2) eradicant, (3) combination ½ strength eradicant plus ½ strength protectant, and (4) protectant-eradicant.

Protectant sprays should be used before infection takes place and before rains. They provide a chemical barrier between the susceptible tissue and the germinating spores. They will not eradicate an established infection. Examples are wettable sulfur, ferbam, Glyodin, Glyoxide, and captan. Captan has for sometime been classified as a protectant - eradicant; however, detailed orchard spray plot tests conducted by research plant pathologists, J. D. Moore and C. F. Ehlers in Wisconsin during the past few years indicate that it is largely a protectant fungicide under our conditions.

Eradicant sprays have the ability to "burn" out a scab infection within a certain period of time after the infection takes place. Organic mercury sprays such as phenylmercury acetates (Tag, Phix, Orchard Brand, etc.) and others like Coromerc, Puratized Apple Spray, and Ortho LM are considered eradicants in the strict sense of the term; they may be effective (have a "kickback") as long as 48-72 hours after infection, depending upon temperatures but have little or no protective value.

The mercury fungicides can be combined with protectant fungicides in one spray to provide a combination protectant-eradicant mixture for use up through petal fall. When this is done each of the two chemicals is used at ½ the dosage normally recommended when each material is used alone. Examples are captan or Glyodin or Glyoxide or ferbam or sulfur at half-strength combined with an organic mercury fungicide at half-strength. In a few states dichlone (Phygon XL) fungicide is used by some growers in place of mercury in this combination mixture. It is said to have a kickback of 30-36 hours when used in combination at half strength, while mercury at half-strength has a kickback of 40-45 hours.

A protectant-eradicant fungicide is one that acts both as a protectant and as an eradicant. An outstanding example is dodine (Cyprex). It gives longer protection than some of the standard protectants, yet also has an eradicant kickback of 28-30 hours when used at the ½ lb. rate, and up to 48 hours at the ¾ lb. rate. Dodine also resists weathering better than some materials and has the facility of spreading out over the surface of the leaf shortly after being applied, providing a uniform, protective coverage. It is especially recommended where a

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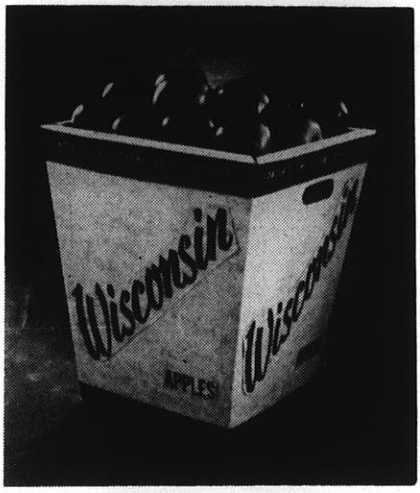

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reduced schedule is being followed, based on rain period-temperature data, and where scab was a problem the previous season.

Lime-sulfur is an eradicant-protectant reported as having a kickback of up to 72 hours. Another example is dichlone (Phygon XL) with a reported eradicant value of up to 48 hours. As mentioned earlier, captan is considered by some as a protectant-eradicant.

In summary, it is well for growers to keep in mind that: (1) protectant fungicides will help protect foliage and fruit for several days after application against scab infection, but will not eradicate the fungus after infection has taken place; (2) eradicant fungicides will help eradicate a scab infection even though applied as late as 40-72 hours after infection takes place, but will not protect fruit or foliage for any appreciable length of time against infection; (3) using a protectant-eradicant fungicide has the decided advantage of giving protection against scab infection between spray applications under normal weather conditions, and at the same time providing an eradicative kickback action of up to 48 hours under adverse conditions; (4) new growth is developing throughout most of the season, and it is dangerous to leave it unprotected against scab attack; (5) thorough coverage of all of the foliage on each tree is necessary for adequate protection against apple scab outbreak; (6) upper leaf surfaces become resistant to scab infection as the season advances, but the lower surfaces remain more or less susceptible throughout the summer; (7) fungicides should in most cases be used at the rates recommended in Circular 520-C, especially where a reduced spray schedule has been used.

Another Apple Consumer

On June 29th Susan Rae Honadel came to join her two brothers in the Elroy Honadel Jr. family. Now Nancy can look forward to some help in preparing her good apple dishes.

Fertilizing Apple Trees

G. C. Klingbeil, Extension Specialist
Fruit Production
Univ. of Wisconsin

In order to continue producing at optimum levels, all fruit plants require certain levels of available plant food. The availability of nutrient elements to the plant depends to some degree on the pH (degree of alkalinity or acidity) of the soil, moisture, temperature, and other factors. Most fruit-producing plants thrive best in soils that have a pH between 6.2 and 6.8. They will grow in soils having values outside the optimum range; however, nutritional disorders are more common. Extreme excess or deficiency of moisture may restrict the availability of nutrients in the soil or the plant's ability to utilize them. Deviations from optimum growing temperatures are also a factor.

The application of fertilizer is primarily to replace nutrient elements that have been removed and to correct existing deficiencies. It is not too difficult to determine the quantity of nutrient elements removed, but it is more difficult to determine what is available and where deficiencies occur. Diagnostic methods commonly used to determine the nutritional needs of apple trees are as follows:

1. The observation of known nutrient deficiency symtoms on foliage and fruit. This method is not entirely satisfactory because:
   a. When such symtoms occur the performance of the tree has already been greatly reduced.
   b. Symptoms for all elements are not known.
   c. Other factors may cause the same symptom.
2. **Soil Tests.** Such tests can be run by the state, county, or private testing laboratories. Their greatest value is in determining the need for calcium, magnesium, and potash. They will also show pH values. Such tests are not satisfactory because:

a. They were developed primarily for annual crops and not woody plants.
b. Samples are usually only obtained from the surface layer of soil.

3. **Tissue tests or leaf analysis.** This relatively recent method will reveal the composition of leaves which then can be compared with an established standard value to interpret the results and predict nutritional needs. Determinations can be made for all nutritional elements. This method also has shortcomings:
   a. Absorption by the roots may be restricted because of root damage and excess or deficient moisture.
   b. Mechanical damage to roots and trunk may restrict normal function.
   c. In Wisconsin, laboratory facilities for analysis are very limited.
4. **Average terminal shoot growth.** This method can only show a general growth status and can only be an indicator of a general nutritional status. An over-all average terminal growth of six to eight inches on McIntosh is considered adequate. With delicious it should be somewhat more.
5. **Size and color of foliage.** Pale colored or yellowing foliage may indicate a lack of nitrogen. Large green leaves and excessive growth may indicate an excess of nitrogen. Other color patterns have been established for deficiencies of some other nutrients.
6. Size, color, and quality of fruit. This method can only show a general nutrition status. Large, poorly colored fruit may be improved in some situations by increasing potash. Corky spots in the fruit may indicate an extreme deficiency of boron.

The trained observer uses all of the known methods or tools avail-

able to help determine the proper fertilizer recommendations. Commercial fruit growers should utilize as many diagnostic methods as they can.

NOTES

1. Apple trees feed heavily on nitrogen and potash. A rough rule indicates that when 400 bushels of apples per acre are produced, it takes 20 pounds of nitrogen, 4 pounds actual phosphorus and 25 pounds actual potash from the soil. This is removed. In addition, about an equal amount is required to replace that lost in pruning and foliage plus that required for maintenance.
2. Phosphorus is rarely, if ever, limiting.
3. Minor elements such as boron and magnesium have been found to be deficient in some areas in Wisconsin.
4. Fertilizers are normally applied in spring before growth starts, or as a split application, half in spring and half in fall after harvest, usally in October.
5. It is advisable not to apply nitrogen after July 1.
6. Apply fertilizer on the ground in the so-called "drip" area of the tree.
7. One ton of stable manure has a nutrient value roughly equal to 100 lbs. of 10-5-10.
8. If a "rule of thumb" for amateurs is desired, the following are suggested:
   a. **Nitrogen**—⅛ pound 33-0-0 (ammonium nitrate) for each year of age up to four pounds per tree (one cup equals one-half pound).
   b. **Complete**—½ pound 10-10-10 or equivalent for each year of age up to 10 pounds per tree.

Wisconsin Apple Institute To Sponsor Retail Promotion Contest

The Wisconsin Apple Institute has again decided to sponsor a Retail Promotion Contest. The program was started last year and enjoyed a fair amount of success. The directors of the Apple Institute feel this program offers incentives to both the grower and the buyer and should help move Wisconsin apples. Growers, especially, are urged to inform their distributors or sales outlets of this program and, if possible, help them to prepare exhibits.

The Department of Agriculture has mailed notices of the program to the major retail-wholesale outlets in the state.

Encourage your own grocer to participate. Offer to help him.

1963 Wisconsin Apple Institute Promotion Contest

Announcing:

A RETAIL PROMOTION CONTEST.

Awards:

Grand Prize of $100.00 for best display of Wisconsin apples.

Plus:

11 Regional 1st prizes of $25.00 each.
11 Regional 2nd prizes of $15.00 each.

Who May Enter:

Contest is open to any retail grocery store in Wisconsin and Northern Illinois promoting and displaying Wisconsin apples between September 1 and October 15, 1963. Entry should be made in name of person responsible for display—store manager, produce manager, store merchandiser, or other designated individual.

Display must feature only apples from Wisconsin orchards. Materials used in display may include original art and ideas and/or national and state promotion and educational aids. The Institute encourages the participants to contact their suppliers for assistance in

providing merchandising material.

How to Enter:

Submission of an 8 x 10 inch black and white photograph of the display along with the following information:

Name of Entrant ----------

Store Name & Number of District --

Store Address ----------

County ----------

Dates Display Appeared in Store ----

Source of Wisconsin Apples used in Display ----------

The Institute suggests that the person responsible for the display, or some other designated individual, also be included in the photograph.

Judging:

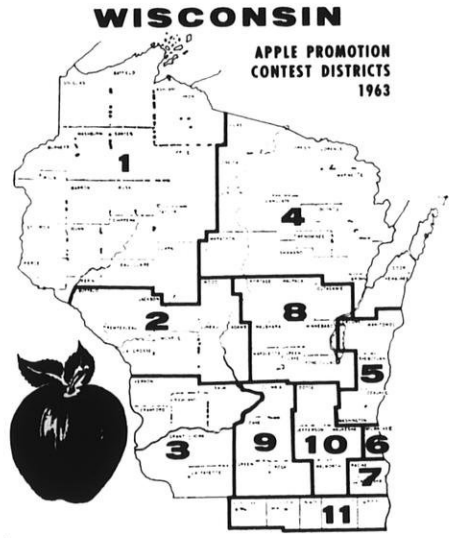
Judging of entries will be based entirely on the photo submitted. Basic items which will be considered are attractiveness, originality, theme and merchandising potential.

Send Entry To:

Wm. F. Meyer, Chairman, Promotion Committee, Wisconsin Apple Institute, Waldo, Wisconsin, by October 31, 1963.

Announcement of state and regional winners will be made November 15, 1963.

Additional entry blanks may be secured from Mr. Meyer at Waldo, Wis., or from the Wisconsin Department of Agriculture, Marketing Division, 34 North, Madison 2, Wis.



Strawberry Troubles

Earl K. Wade, Ext. Pathologist

The main problems we have encountered in strawberry plantings is, of course, frost damage and winter injury to the plants. The plants may make normal growth until the first berry clusters start to size up and then they suddenly wilt down and gradually dry up. The crown may be fairly sound, but the root system generally shows

little or no development of new feeder roots, while the older roots are more or less discolored and lifeless.

USDA Proposes Revised Standards For Apples

The Federal Register of June 11, 1963 contains a proposal pertaining to a revision of the grade standards for apples. The proposal would set less restrictive shape, color and defect requirements for U. S. Extra Fancy grade, eliminate U. S. No. 1 Cooker grade, and require U. S. Extra Fancy and Fancy grades of apples after December 31 of the year they were produced to be "free from damage by invisible watercore." Should any person be interested in expressing his opinions on these changes, they have until August 1 to do so.

The elimination of the Cooker grade could have some effect on Wisconsin, especially those areas who sell early apples to Canada. U. S. Cooker grade carries no color requirements and there has been occasions when some of the early apples could not meet U. S. 1 color requirements. Thus, they were sold and accepted by Canada under the Cooker grade.

Wisconsin Horticulture

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WOMEN'S SECTION

During a meeting of the editorial committee, the women folks were busy too and presented your editor with two recipes. If you like them credit Mmes. Fritz Meyer, Walter Clemens and Willard Nieman—if not what do you prefer?

APPLE DAZZLE

FILLING:

1½ T. minute Tapioca
¾ cup sugar—⅛ t. salt
¼ t. cinnamon — dash of allspice.
1 can (1 lb. 4 oz.) sliced apples OR
5 fresh baking apples.
1 T. lemon juice.

PASTRY:

1 cup flour. ½ t. salt.
⅓ cup shortening. ½ c. finely grated cheddar cheese.
2 T. iced water.

COMBINE filling ingredients; let stand 15 minutes.

Make pastry by mixing flour and salt. Mix shortening and cheese. Cut into flour until mixture resembles coarse meal. Sprinkle with water; mix lightly. Shape into ball. Roll out ⅛" thick on lightly floured board. Cut 4 circles, each 1 inch larger than tops of 1¼ cup baking dishes. Cut slits in tops. Spoon filling into dishes. Moisten rim of dish; top with pastry. Open slits. Fold pastry under to make standing rim, flute. Bake in hot oven (425 degrees F.) 25 to 30 minutes. Makes 4 servings.

APPLE PUDDING

Preheat oven 350 degrees F. Peal 6 medium apples, cut in pieces.

Cream 1 cup shortening, and 2 cups sugar.

Beat 2 eggs, and add to sugar and shortening.

Add apples, and stir in 2 cups flour. 2 t. soda, 2 t. cinnamon, 2 t. nutmeg and 2 t. vanilla. Add 1 cup chopped nutmeats.

Bake in buttered oblong pan until done.

SUMMER APPLE BREAD

¼ cup shortening 1 teasp. salt
⅔ cup sugar
2 eggs well beaten
2 cups sifted enriched flour
1 teasp. baking powder
1 teasp. baking soda.
2 cups coarsely grated raw apples
1 tablesp. grated lemon peel
⅔ cup chopped walnuts

Cream shortening and sugar until light and fluffy; beat in eggs. Mix and sift flour, baking powder, baking soda and salt; add alternately with grated apple to egg mixture. Stir in lemon peel and walnuts (batter will be stiff). Bake in greased and floured loaf pan 8 x 5 x 2 inches at 350°, 50 to 60 minutes. Do not slice until cold.

HANDY HINT

Keep a pocket size note-book with your canning or freezing supplies. Each year enter how much is canned or frozen. Then guage the new preservation by what you have left over and your anticipated needs. Add each day's total to the previous total so a glance will tell just how much is canned or frozen.

Mrs. Louise Koelsch,
Hales Corners, Wis.

Mrs. Koelsch also wants a recipe that uses both apples and cranberries. The whole apple was peeled only one-third of the way beginning at the stem end and in the cooking, the apple took on the cranberry tint. Nuts were also used. Who can help us?

Wisconsin Horticulture

VOL. XLVIII August ~~July~~ 1963 NUMBER 2

Is Your Membership Paid?

There can be many reasons why membership dues are not paid on time in various organizations. Carelessness can probably be put at the head of the list. With those groups which have no publication, no tours, no annual convention and very little correspondence, prompt payment of dues may not be so important. Those like the Wisconsin State Horticultural Society and the Wisconsin Apple Institute which have regular expenses must have funds to regularly pay postage, printing, various costs related to tours and other meetings, office supplies, reports and so on.

The disturbing thing is that over half of those who have regularly been receiving the Newsletter and now the Wisconsin Horticulture, have not paid their 1963 dues to the Horticultural Society. All have received a notice to pay their dues since a first letter was sent to all who had not paid. Many paid promptly after this notice, while a few letters were returned as undeliverable —death or no forwarding address.

To bring this problem more closely to your attention, there is provided below a small square—if it is clear it means your record is good—if it contains a red mark, it means your 1963 dues are not recorded as paid. It also means that two people must spend hours to go through the records.

[ ]

If your copy has a red mark and you have paid your dues, please write the editor as to the facts. A number paid at the annual convention and unfortunately not all of these were recorded. Three people sent in their membership cards to prove this. Over five hundred of this issue will carry red marks. Not a good record, is it?

Your cooperation in clearing the records will be much appreciated.

FIREBLIGHT

Farming has often been called the greatest gamble of any business. Certainly the fruit grower ranks near the top of this gambling class. Excessive cold, late frost, wind, hail, no rain, too much rain at one time, insects, diseases, predators—like mice, birds, deer and rabbits. There is also an oversupply of apples caused in part by lack of persistent advertising about the health values of regularly eating apples.

This summer for apparently no good

FIRE BLIGHT—Blighted twigs or terminals.

WISCONSIN HORTICULTURE

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S. S. Mathisen, Editor, 1542 So. 82 St., West Allis 14, Wis. Phone—BL 8-1755.

FIRE BLIGHT CANKER active stage. The bacteria over-winter in this type of canker.

reason, fireblight is causing considerable damage. Certainly not every dead twig or dead area on a branch is due to fireblight. While summer pruning is not particularly recommended, the dead branches and diseased areas should be removed before growth starts next spring. A squirt type oil can with paint can be used now to mark trees that will need special attention later. The accompanying photos furnished by Prof. Earl Wade, Univ. Wis., may help you to identify the disease. For more complete information that should be in every apple grower's reference file, ask your County Agr'l Agent for a copy of Cir. 517 — Apple and Pear Fireblight Disease, and a copy of Earl Wade's Plant Disease Notes No. 51 on Fireblight.

Two-Spotted Spider Mites

J. L. Libby, Extension Specialist

Entomology, University of Wisconsin

Wisconsin orchardists should be on the lookout for a buildup of two-spotted mite populations in their orchards this year. Infestations usually develop in late summer and early fall, August and September with activity continuing until hibernation.

Adult female two-spotted spider mites are tiny, yellow, green, or reddish, oval mites about 1/50 inch long with eight legs and a prominent dark spot on each side near the middle of the body. The male mites are smaller than the females, being 1/80 inch long and similar in appearance. Mites generally become darker with age or in cool temperatures.

The life cycle of the two-spotted mite is rather complex. The eggs are spherical, shiny, and very small; they are attached to the underside of the leaves, usually to the web, which the adult mite spins. The eggs hatch in 4 to 5 days into small, crawling young, which look like the adults except that they have only three pairs of legs. The newly hatched mite feeds for a day or two and enters a resting stage. After another day it molts to a second feeding stage and again enters a resting stage. The adult male emerges from the second resting stage but the female goes through a third feeding and resting stage before reaching the adult stage.

Adult mites generally mate within a few minutes after the female becomes an adult. Unmated females lay eggs from which only male mites develop. Both males and females develop from the eggs of mated females.

Dr. Floyd F. Smith with the Bureau of Entomology and Plant Quarantine at Beltsville, Maryland conducted studies with the two-spotted mite in greenhouses and found that the developmental period varies widely with the temperature. The eggs hatch in 2 or 3 days at 75° F. or higher or after 21 days at 55°. Under average temperatures of 60° to 70°, the incubation period is 5 to 10 days and development to the adult stage from 10 to 15 days. One female lays a few eggs daily and a total of 100 to 200 eggs during an average life of 3 to 4 weeks.

One female can give rise in one month, through succeeding generations, to a progeny of 20 mites at 60°, about 13,000 mites at 70°, and over 13 million mites at 80° constant temperature. Of course, we do not have constant temperature conditions in our orchards but this illustrates the fact that we can get a fairly rapid buildup of mite populations under hot, dry conditions, as we are experiencing this year.

Mites feed by piercing the epidermis of the leaf with their needle-like mouthparts and drawing out the plant juices. Infested leaves turn pale and stippled. As the infestation becomes severe the leaf will appear sickly, turn reddish-brown, and then crumple and die. Severe injury interferes with photosynthesis, adversely affecting fruit quality and the vigor of the tree for the coming year affecting production.

Two-spotted mite control is somewhat more difficult to obtain than is European Red Mite control. The two-spotted mites do not overwinter as eggs on the trees as does the red mite so dormant

oil sprays and early season miticides have little or no effect upon two-spotted mite population. The two-spotted mites hibernate as adults on the orchard ground cover and in areas adjacent to the orchards. During the early part of the summer their populations build-up on weeds and other plants in the orchard. In late summer, the two-spotted mites are in great enough numbers to move into the trees. Their small size, rapid reproduction, and protection beneath webs on the under surface of the leaf increases the difficulty in controlling them with chemicals.

Miticides for controlling two-spotted mites should be applied when the mites are building up in the trees; this might be in July but is usually not before August. The miticides recommended in University of Wisconsin Circular 520 C for 1963 are 1½ lbs. of 25% chlorobenzilate per 100 gallons; or 1½ - 2 lbs. of Kelthane W. P. per 100 gallons; or 1 lb. 25% Tedion W. P. per 100 gallons. On apples Chlorobenzilate can be used up to 14 days before harvest; Kelthane to 7 days before harvest; Tedion to 1 day before harvest. Tedion should not be used for more than three applications during the fruiting period.

Circular 520 C—1963 Insect and Disease Control for Apples, Cherries and Strawberries as well as Bulletin 548 Wisconsin Apple Insects are available from your County Agricultural Agent.

Advertise Your Crab Apples

When you are enjoying a nice roast or a steak, what is nicer than an occasional nibble on a pickled crab apple. Those inviting handles (stems) to make your selection, then to help you get the light tartness so you get more enjoyment from the meat. It might encourage you to eat too much, but isn't it fun to make the cook happy?

APPLE STORAGE

G. C. Klingbeil, Extension Specialist, Fruit Production, University of Wis.

An apple fruit is a storage place for the products of photosynthesis. Photosynthesis is the process of making sugars, starches, and other chemical products with the aid of light in the chlorophyll-containing tissues of the plant. At maturity an apple fruit will contain about 84 per cent moisture and about 15 per cent carbohydrates (sugars and starches). After harvest apples remain alive, thus the normal process of respiration continues. The process uses or consumes the natural sugars in the fruit in the presence of oxygen, with carbon dioxide, moisture and heat the primary by-products. If decay organisms or other disorders do not destroy the fruit, respiration continues until the fruit becomes soft, mealy, tasteless and dry.

Reduced temperature is one means used to retard respiration, thus slowing the loss of the desirable qualities in an apple. The ideal storage maintains a constant temperature at 30 to 32 degrees Fahrenheit, a relative humidity of about 85 per cent, and an adequate air circulation. A controlled atmosphere (CA) storage has the same basic requirements but in addition it must have a means to regulate the levels of oxygen and carbon dioxide, a special lining to prevent gas loss and a means to purify the atmosphere. These requirements necessitate special equipment.

Probably the most important factor in fruit storage is temperature control; the next would be carefulness in fruit handling and time lapse from picking until fruit is at storage temperature. Other factors that will affect the storage life of an apple are: state of maturity at picking, the variety, the season, the nutritional level, and age of the tree.

Apples must be picked at optimum maturity, which can be estimated by determining the number of days from full bloom to harvest, using a pressure

tester, color measurement, and by the ease with which the stem separates from the tree. Early-ripening varieties have a much shorter storage life than late-ripening varieties. Fruit from young trees and trees that are over-vegetative usually have a shorter storage life than fruit from mature trees grown at optimum nutritional levels. Several suggestions follow that will aid in increasing the storage life of apples.

Move apples from the orchard into the cold storage as rapidly as possible. If apples are left in the field for five days at average temperatures of 70° Fahrenheit, their storage life will be reduced by half. In other words, McIntosh that usually have a normal storage life of 120 days in regular storage cannot be expected to maintain good quality longer than 60 days in the above situation.

Avoid bruising. Bruised fruit will usually have a shorter storage life than good, sound fruit. Bruising speeds certain enzymatic changes which will reduce the quality of the fruit. Skin punctures will allow decay organisms to enter.

Good air circulation is required in a storage. During cool fall nights when outside temperatures are below those in the storages, ventilators should be opened to aid in cooling. Fans of sufficient size and properly placed in the storage will maintain adequate circulation. Adequate ventilation is usually assured in most storages in the normal opening and closing of the storage doors.

Relative humidity should be maintaned at 85 to 90 per cent. This is most difficult to maintain early in the season when storages and crates are dry. Temperatures should be kept low and constant. Early in the season field heat plus the heat of respiration make optimum temperatures difficult to obtain. An optimum temperature for most varieties is 32° Fahrenheit. Apples will freeze at about 28° Fahrenheit.

When apples are removed from storage, they should be kept cool. They ripen twice as fast at 40° Fahrenheit as at 32°, at 50° twice as fast as 40°, and at 70° twice as fast as at 50°.

In order to get maximum storage life, commercial growers must pick apples at optimum maturity, handle them carefully, cool them rapidly, then store them at a constant, optimum temperature and humidity. Growers without refrigerated storages can devise means to artificially approximate the conditions of an ideal storage.

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Meyer Orchards, 9470 S. 27th St., Oak Creek, Wis.

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Outagamie Fruit Growers Cooperative (Steve Laird, Sec.), R. R. 2, Black Creek, Wis.

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Pieper's Fruit Farm, Brownsville, Wis.

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Wm. P. Rider, R. R. 4, Box 636, Kenosha, Wis.

Jack Rasmussen, R. R. 4, Oshkosh, Wis.

Richard Rasmussen, R. R. 4, Oshkosh, Wis.

Sheboygan Co. Fruit Growers, B. Halbig, Sheboygan Falls, Wis.

Robert Sacia, R. R. 1, Galesville, Wis.

Ethan Sacia, R. R. 1, Galesville, Wis.

Fred L. Sacia, R. R. 1, Galesville, Wis.

Roger Sacia, 929 Cedar St., West Bend, Wis.

Schroeder Orchard, R. R. 1, Belgium, Wis.

Randolph Smith, Van's Orchards, R. R. 4, Box 484, Kenosha, Wis.
Jay R. Spittler, Echo Lodge Orchards, Trempealeau, Wis.
L. H. Stringer, Orchard Farm, Milton, Wis.
Star Orchards, Jerome Haen, R. R. 3, Kaukauna, Wis.
Albert J. Theys, Luxemburg, Wis.
Ellery Teach, Sunrise Orchard, Gays Mills, Wis.
Albert A. Ten Eyck, R. R. 2, Brodhead, Wis.
Sid Telfer, Jr., Ellison Bay, Wis.
Thompson Orchards, R. R. 4, Box 623, Kenosha, Wis.
K. P. Van Epps, Weyauwega, Wis.
Don Van Elzen, Lamers Rd., Kimberley, Wis.
John Van Elzen, 532 So. Wash. St., Kimberly, Wis.
Washington & Dodge Co. Fruit Growers, M. Hovland, West Bend, Wis.
Arthur Wendel, R. R., Adell, Wis.
Waldo Orchards, Waldo, Wis.
Willard O. Wagner, R. R. 1, Cleveland, Wis.
Wisconsin Orchard Supply, 704 Concord Rd., Oconomowoc, Wis.
Lenore T. Zinn, R. R. 1, Hartford, Wis.

Raspberry Culture

How is or was your raspberry crop this year? How much did you lose due to disease? Spraying is very helpful, but let's not forget that there must be disease to get more disease. Where did the disease originate that affected your yield this year? Most probably from your own last year's canes. It is true that some of this is hard to prevent even with careful spraying. The infection that is not necessary is that which takes place after the fruit crop is harvested and the old canes have no further value. Why leave them in such close contact with the new growth that is so susceptible to disease? In general, diseases spread most rapidly with moist conditions. Those old canes help hold moisture around the new canes and in addition take some of the soil moisture away from the young plants. Moisture is usually not too plentiful in the hot months of July and August so here is another opportunity to help those new canes that will have your 1964 crop.

Unless you enjoy digging raspberry stickers out of your hands for several days after handling the old canes, a heavy pair of leather gloves is almost essential. Remove from the patch and burn the canes and with them the disease organisms and insects that might be present.

While you are doing this you can examine the young canes for insect injury. It is easy to see the injury caused by the raspberry borers. If you are not familiar with this, go to your County Agr'l Agent's office and get the Wisconsin Circular on raspberries. It is a good one.

And now some of the personal benefits. Excessive perspiration rids the body of accumulated poisons (so we

are told) and what a splendid appetite is developed by stooping action. So do not put it off each year—as soon as the crop is harvested, start getting those personal benefits.

A heavy mulch between the rows not only helps hold moisture, but helps prevent weed growth. It is also nice to walk on after a heavy rain during harvest season. A mulch in the row is also beneficial but not so easily applied. Chopped hay or straw, shavings or crushed corn cobs are some of the things that can be thrown in the row. Fairly convenient times to do the latter would be just after the old canes are removed, in the fall after the leaves are off or in the spring before leaves appear.

Crop and Market Information

Marlon Schwier, Wisconsin Department of Agriculture

This brief report is being written prior to the August Crop Reporting release due out about the 10th of the month. I am guessing the report will have little change from the July estimate which listed Wisconsin for a 1,400,000 bushel production, about the same as the 1962 crop.

Information gathered from growers attending the recent Horticultural Society annual summer tour indicates varied conditions prevail throughout the state. Some growers had very light crops, while others are better than last year. A series of destructive storms, principally hail, have also been prevalent this summer and will definitely affect the marketable volume from Wisconsin.

Nationally, the crop is predicted to be 116.3 million bushels—7% below last year and 4% below the 1957-61 average. However, the Midwest, which includes Michigan, Illinois, Ohio, Wisconsin and Minnesota, are predicted to have much shorter crops. The East Coast area is also down and only a large crop on the West Coast, particularly Washington, is keeping the national average this high.

The present market condition looks strong. Movement has been good, especially on the 1962 crop, specifically Washington, and for the new crop already coming on the market.

Wisconsin Dudleys have been moving into the market about 75¢ to $1.00 higher than last year. Chicago prices on Dudleys have been $3.25 - $3.50 in bushel baskets and $3.75 - $4.00 in 10/4's. Growers selling Dudleys are reporting demand has been good. Some movement of Duchess has been occurring at prices similar to Dudley's. Retail markets report the demand for apples has been good.

The Wisconsin - Minnesota Departments' of Agriculture first market information report will be released on August 20th.

How Many Apples for a Pie?

There are two large, three medium, or four small apples in one pound. Six to eight medium size apples are required for a nine-inch pie or for three cups of applesauce. One bushel contains 42-44 pounds of apples or 125 apples of 2¾ inch diameter. It is less expensive to buy apples by the bushel than by the pound.

Nature's Health Food

A national publication in boosting for better health is recommending apples.

PARADE in its Special Intelligence Report states "HEALTH FOOD. An apple a day does keep the doctor away. More than a thousand students at Michigan State have been munching apples for the past three years with beneficial results. They have fewer colds and altogether fewer respiratory ailments. In fact they enjoy better general health than students who don't eat apples."

What do you get in an apple? Here is the nutritive value—an average apple contains 85-95 calories, some vitamin A, thiamin, riboflavin, niacin, ascorbic acid, calcium, phosphorus, potassium, sodium, some copper, iron and manganese. Isn't just eating an apple a nice way to get all of these essential foods?

Sprayer Service Letter

Do you get this from your County Agricultural Agent? If not write or call him and ask to have your name put on the mailing list to get the worth-while information provided several times during spring, summer and fall by Wisconsin professors, Berge, Fisher and Doersch on application equipment, insect control and weed control.

Agricultural Research USDA

We have known for a long time that the ripening process in fruit—tomatoes, pears, apples — is involved somehow with production of ethylene in the fruit. When apples are held in storage, for example, the high ethylene production by one ripe apple in the barrel may hurry ripening of others.

"Last year in the course of studying ethylene formation by fruit, we identified ethylene oxide from volatiles obtained from apple tissue. We then discovered that exposing fruit to ethylene oxide caused the reverse of the effect produced by ethylene. This surprised us because we thought that the ethylene oxide might tend to speed ripening like ethylene. Instead, it appears to delay ripening."

At present, the way that ethylene and ethylene oxide work in plant metabolism is not known. The efforts of the scientists are now directed toward finding that out. The results of this work may eventually be useful for increasing the keeping quality of horticultural crops after harvest.

It seems to be true that you can buy seat belts in genuine ocelot at $35.00; mink at $50.00 and Chinchilla at $100.00. Think how much better it would be to spend this money for better health in the shape of good apples. Advertising can do it!

A New Help for Beekeepers

Your editor knows from personal experience, what a difficult and messy job is that of uncapping honeycombs by hand. If your beekeeping friend has not heard about a new machine to do this, he will be glad to.

Mr. Charles D. Owens, an agricultural engineer with USDA's Agricultural Research Service has not only invented but has a public service patent on a machine that uncaps 20 combs a minute and eliminates the extra step of separating the wax from the honey.

In using the uncapping machine, an operator passes the honeycombs between a pair of heated aluminum rolls with teeth that punch holes in the wax capping. These rollers operate continuously and uncap both sides of the comb at one time. Each roller, 3 inches in diameter and 17 inches long, has more than 3,200 metal teeth. Heating the rollers to 120 degrees F., or higher, prevents the wax and honey from sticking to them. The rollers are designed to uncap a standard 17-inch honeycomb.

After the comb is uncapped, and the honey extracted, either a second pair of rollers or a set of metal fingers roughens the wax surface so that the comb may be reused.. Mr. Owens says that bees will not readily refill a comb if the surface of the wax capping is too smooth; instead, they recap the still empty cells.

Persons interested in making the uncapping machine may apply for a free license from Administrative Services Division, Agricutlural Research Service, U. S. D. A., Washington 25, D. C. The application should refer to patent number 3,068,496.

Supplementary Juice for Infants

The National Apple Institute has supported a research study on apple juice and the effect it has on infants. This study was initiated by Dr. William G. Way, and Dr. Joseph M. Damron, of Winchester, Virginia. Their findings showed that infants drinking apple juice instead of orange juice suffered less common infant disorders. This article appeared in the March, 1963 issue of the Virginia Medical Monthly, which is the official publication of the Medical Society of Virginia. The article is called "Supplementary Juice for Infants" and if you want a copy, just write your editor enclosing a large size, stamped addressed envelope.

Pesticides

PESTICIDES are a great boon to mankind, Dr. Davis E. Price, Asst. Surgeon General of the U. S. Public Health Service, was quoted as saying in Today's Health (Feb. 1963). The alarm of some persons that insecticides cause human and animal diseases is not shared by scientists who have studied insecticides, nor by the vast majority

of physicians. Another PHS staff member, Dr. Wayland J. Hayes, Jr., said DDT is credited with saving at least five million lives during World War II.

Just What Things Are Dangerous?

Dr. Frederick J. Stare, Professor of Nutrition and Chairman of the Department of Nutrition, Harvard University, says, "As a matter of fact, there has never been one medically-documented death due to proper use of insecticides. Deaths due to improper use, according to USDA, totaled 89 last year. Improper use of any substance can cause harm and even death. For example, aspirin accidentally kills about 150 a year, most of them children. No one has yet suggested we do away with aspirin—or automobiles, which kill thousands of people."

If your patrons inquire about spraying and the safety of it, why not give them this information?

Auxiliary Committees for 1963 Horticulture Convention

Banquet and Luncheon Decorations

Mrs. Bigelow Lourie, Gays Mills (Chr.)
Mrs. Roy Dingle, Richland Center.
Mrs. William Louis, Richland Center.
Mrs. Gerald Fleming, Gays Mills.

Afternoon Refreshments

Mrs. Arthur Bassett, Jr., Rt. 4, Baraboo. (Chr.)
Mrs. LaVerne McGilvra, Rt. 4, Baraboo.
Mrs. Earl McGilvra, Rt. 4, Baraboo.
Mrs. Emil Beyer, Rt. 1, Malone.

Dessert Contest

Mrs. Walter Clemens, 10813 N. Pt. Wash. Rd., Mequon. (Chr.)
Mrs. Willard Wagner, Rt. 1, Cleveland.
Mrs. Orville Kaiser, Rt. 2, Hartland.

Resolutions

Mrs. Howard Erickson, Egg Harbor. (Chr.)
Mrs. Roberta Sacia, Rt. 1, Galesville.
Mrs. George Premo, Richland Center.

Luncheon Arrangements

Mrs. Fred Meyer, Waldo.

Nominations

Mrs. Carol Krippner, Fort Atkinson. (Chr.)
Mrs. Armin Barthel, 12246 N. Granville Rd., Mequon.
Mrs. Otto Koepsel, Mayville.

Tentative Program

Plans for the Ladies' Luncheon at the convention are not yet definite; look for an announcement in the next issue.

On Tuesday forenoon, Mrs. Leroy Meyer has consented to give a demonstration of Holiday Decorations for the home and table. If you have an interesting hobby, will you bring it and share it with the ladies.

A Dessert Contest will be part of the program—do bring your favorite recipe for an apple dessert accompanied by the baked product with you when you come to register. First and second prizes will be awarded in each category. Afterwards the desserts will be served at the afternoon tea.

Ticklers from the annual Wisconsin Master Farmers' Convention

Just before going to school one morning little Johnnie tore the seat of his pants. Mother did not have time to sew it properly and time was very short so she used a safety pin to take care of the emergency. He got to school a bit late and so teacher said, "Johnnie, I see you're a little behind this morning." Johnnie replied, "Yes, teacher, but you wouldn't have if mother had another safety pin."

To appreciate this one you must know that Basse is a German name and the 'a' is pronounced 'ah'. Carl Ritland showed among several others a picture of Will Basse's home. He said "I have another good photograph of Mr. and Mrs. Basse with their fine herd sire, but last time I showed it Mrs. Basse wanted to choke me when I said 'Here's a fine picture of three Basses'."

A man said he had been married 28 years and it seems like only yesterday and you remember what a terrible day yesterday was.

The Wisconsin Master Farmers and their wives are a grand group who thoroughly enjoy their annual two full days of visiting, entertainment and educational tours. While there is some reminiscing, by far the most common talk is about the new things in agriculture and the experiences good and bad of the past year. Helpful people, every one; that's why they are master farmers.

Sec. 34.66 P. L. & R.
U. S. Postage
PAID
Permit No. 45
Lake Mills, Wis.

Return Requested

Attention, Wis. Apple Institute Members

Place your orders now for a rubber stamp as shown herewith. $1.50 each postpaid. Send check to Wis. Apple Institute, 1542 So. 82 St., West Allis 14, Wis.

Pies From Cans

Bakers like to bake—not peel apples for apple pies. This makes a market for apples ready to put in the crust, no peeling or coring necessary. The A. T. Hipke & Sons Canning factory at New Holstein, Wis. in addition to their usual packing, will process sliced apples putting them in what is commonly called gallon cans. They will use from one to two thousand bushels a day of only N. W. Greenings. No sugar or salt is added since the bakers prefer to do their own flavoring. Only hot water is used to eliminate any air in the can. The Hipkes use apples from many parts of the state, so if you have a surplus of N. W. Greenings, you will want to read the advertisement in this issue giving more details of what is desired.

Annual Convention. November 19-20, 1963

Wisconsin State Horticultural Society and Wisconsin Apple Institute members will meet Tuesday and Wednesday, Nov. 19 and 20, at the Retlaw Hotel, Fond du Lac, Wisconsin, for their usual fine annual convention. Program plans are not yet complete, but contracts are being made with outstanding speakers. There will be the usual fine apple show as well as the beneficial commercial exhibits. The first half day will be devoted to a program for small fruit growers. The banquet will be the evening of the first day as usual. Save these two days to help you summarize this year's results and to give you pep and inspiration for 1964.

Former Director Dies

Virgil Fieldhouse of Dodgeville, passed away July 12 after a long illness. He had been a mail carrier for many years but was better known for his successful Fieldhouse Fruit Farm from which he shipped strawberry plants to many areas of the United States as well as abroad. For 11 years he assisted in the Fruit and Flower building at the State Fair. Surviving are his widow, Elva, three sons, Gerald, Chicago; Donald, Newark, Delaware; and David, Williams Bay. Two daughters, Mrs. Jack Reynolds, Hollandale, and Mrs. Robert Reynolds, Dodgeville, and 12 grandchildren.

Wisconsin Horticulture

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HEALTH FOOD

The national publication PARADE in its Special Intelligence report says "An apple a day does keep the doctor away. More than a thousand students at Michigan State have been munching apples for the past three years with beneficial results. They have fewer colds and altogether fewer respiratory ailments. In fact they enjoy better general health than students who don't eat apples."

Isn't it about time that the apple growers REALLY got together and REALLY advertised the health values of the regular use of apples? And don't try to tell this editor that it can't be done! First, however, the apple GROWERS must convince THEMSELVES that it CAN be done and that THEY CAN DO IT!

Membership Dues

Several members heeded the red mark on the last issue of Wisconsin Horticulture and sent dues of $2.00 to the Wisconsin State Horticultural Society or $10.00 to the Wisconsin Apple Institute. The secretary appreciates this prompt action and wishes that many more would do the same thing. The comparatively good price for apples should make this an easy thing to do.

Advertising

Considering the tremendous amount of advertising apple growers are exposed to on TV, radio, newspapers, magazines, billboards, etc., etc., it is difficult to understand why more fruit growers do not believe in advertising. It should be done at the orchard, at the

This exhibit and hard working crew advertised Wisconsin apples during the 1963 Wisconsin State Fair. Left to right—Sidney Mathisen, LeRoy Meyer, Betty Mahr, Henry Mahr and Marlene Kolbow. Sold were—cider, apples, apple-turn-overs, apple recipe books and slicer-corers. The profits will be used to further promote Wisconsin apples. Every Wisconsin apple grower who has a surplus to sell should be a member of the Wisconsin Apple Institute. Ask the editor for full details.

WISCONSIN HORTICULTURE

Published monthly excepting July and December by the Wisconsin State Horticultural Society and the Wisconsin Apple Institute.

Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

S. S. Mathisen, Editor, 1542 So. 82 St., West Allis 14, Wis. Phone—BL 8-1755.

home buildings, in local papers, through state and national means. So many prospective consumers never see an orchard or read a weekly newspaper that other methods must be used. This is being done, as yet, in a small way by the Wisconsin Apple Institute and the National Apple Institute. The Wisconsin Apple Institute, at the Wisconsin State Fair and at the Wisconsin Teachers' Convention has been promoting the use of Wisconsin apples. This effort has been sponsored by the Wisconsin Apple Institute of which all surplus apple growers should be a member. The Wisconsin Apple Institute this year will pay $1300.00 to the National Apple Institute for its work on a national scale. Some of this money is used to encourage legislation to help the apple growers, while at the same time watching for legislation unfavorable to these growers. Money is used too, to operate the National Apple Kitchen where new apple recipes are developed and perfected, then sent to many TV and radio stations, newspapers and magazines.

National advertising reaches many people who know orchards only through photographs. YOU can be a part of that through a membership in the Wisconsin Apple Institute. Dues for 1963 are $10.00. Apple prices in Wisconsin should be quite good this year and make possible more memberships in the Wisconsin Apple Institute.

Are You Promoting Apples?

Promotion materials available through the Wisconsin Apple Institute:

1. Apple Slicer-Corer (Ludwig). Stainless steel blades — $6.00 per dozen postpaid.

2. Billboard Poster—19' 6" long by 9' high. Eight sheets. For standard billboard. Wording 'Enjoy Wisconsin Apples', five foot red apple, W. A. I. emblem, words—"Meal Time—Any Time." Ample space for name and location of orchard. $8.00 plus delivery for members. Non members—$4.00 more.

3. Bumper Strips — Day-Glo strips (red and white on black) 4" by 15" stating "Enjoy Wisconsin Apples." For cars and trucks. 10 for 1.00 postpaid.

4. Information cards, 3 color, 3" x 5" printed both sides. Apple storage hints, varieties and seasons. Good to put in bagged apples. $6.45 per thousand postpaid. $3.40 per 500, postpaid; $1.15 per 100, postpaid.

5. Juicy Posters — 41" x 54", color, paper poster, young boy with apple caption—"Nothin's Better'n Apples." Attractive background for salesroom wall. $1.00 postpaid to members; $1.50 postpaid to non-members.

6. Over-wire hangers—3 red apples in a 4 color lithograph print, approximately 20" x 16". Very attractive — 10 for $1.00 postpaid.

7. Price Cards—3 color, 11" x 7", cluster of red apples, piece of apple pie, space for price. Good for home display or in stores. $5.95 per 100 postpaid; $3.10 per 50 postpaid; $1.75 per 25 postpaid; $1.35 for 15 postpaid.

8. Recipe Books — "Apple Lover's Guide to Good Eating." Vol. III, 4" x 9", fifteen pages of new and tested information on Sauces, Freezing, and Canning, Appetizers, Relishes, Main Dishes, Salads, Breads, Pies, Cookies, Cakes and Desserts. $5.00 per 100 for members postpaid; $7.50 per 100 post-

paid for non members.

9. Tie Clasps—Red apple with green leaves on white, 1⅝ in. diameter. Excellent gift. Advertise your product. 75¢ each postpaid; 3 for $2.00 postpaid; 10 for $6.00 postpaid. Write for price for larger orders.

10. On separate sheets — "Story of Wisconsin Orchards" and "Story of Wisconsin Apple Institute," on 8½ x 11 paper—No Charge.

Send order and check to Wisconsin Apple Institute, 1542 So. 82 St., West Allis 14, Wis.

The Wisconsin Strawberry Plant Improvement Program

A. R. Kurtz, Chief, Div. Plant Industry, Wis. Dept. of Agriculture

Wisconsin's berry growers can expect to have a larger supply of "Green Tag" (Virus-Free) strawberry plants available for planting in 1964. The number of qualified growers fluctuates from year to year but the total acreage has been increasing.

Wisconsin's total acreage has received a very fine boost with the latest addition to the list of Green Tag growers, namely, Ralph Knutson of Almond.

Following is a list of the varieties which will be available in Green Tag form next spring and a tentative list of the growers to be certified.

Variety	Abbrev.	Variety	Abbrev.
Catskill	CAT	Redglow	RGL
Dunlap	DUN	Robinson	ROB
Earlidawn	EDN	Surecrop	SCP
Gem	GEM	Sparkle	SPK
Jerseybelle	JBL	Streamliner	STR
Midway	MWY		

Name and Address	Varieties
Barlament's H., Gardens, 1896 Velp Ave., Green Bay.	CAT, SPK.
Blue Sky Gardens, Rt. 1, Omro.	CAT, DUN, GEM, EDN, RGL, ROB, SPK, STR, SCP.

Golden Sand Farm, Palmyra. CAT, DUN, JBL, SPK, SCP.

Hall Nurseries, Rt. 2, Elmwood. CAT, DUN, ROB, SPK, STR.

Heckel's Berry Farm, R. F. D. 1, Boyceville. CAT, DUN, ROB, SPK, SCP.

Kailhofer's Greenhouse & Nursery, Main St., Seymour. CAT, DUN, SPK, SCP.

Knutson, Ralph, Rt. 1, Almond. CAT, DUN, EDN, GEM, JBL, MWY, SCP, ROB, SPK.

Makovsky, Edward, 4125 Four Mile Road, Racine. CAT, DUN, JBL, ROB, SPK, SCP.

Pedersen, H. H., Fruit & Plant Farm, Box 38, Warrens. CAT, DUN, EDN, JBL, ROB, SPK, STR, SCP.

Tomjanovich's Cherryland Nursery, Rt. 2, Box 50, Sturgeon Bay. CAT, DUN, JBL, ROB, SPK, SCP.

Ward, Rodney W., & Sons, Rt. 3, Rice Lake. ROB, SPK.

Apple Storage Scald

G. C. Klingbeil, Extension Specialist, Fruit Production, University of Wis.

Apple storage scald is not uncommon in the Cortland, Secor, Macoun, N. W. Greening and some other varieties and has caused considerable financial loss to many apple growers in Wisconsin. Storage scald is physiological in nature and, therefore, is not associated with disease causing organisms or insects. Scald development may be associated with immaturity of fruit, lack of adequate storage ventilation and an accumulation of certain gases in the storage which the apple itself generates in the ripening process. Scald appears after the fruit has been in storage for some time and usually develops first on the green side of the fruit. It shows as a brownish discoloration suggestive of a burned or scalded condition. The affected area remains firm for a time, but as the disorder progresses the discolored areas become darker and the flesh of the fruit under the discolored portions begins to soften. The skin may then be easily broken which allows secondary decay organisms to enter. This ultimately results in complete decay of the fruit. When fruit affected with scald (often difficult to detect in its early stages) is removed from storage and allowed to remain in warm temperatures, the progression of scald and breakdown of the fruit may progress very rapidly.

Scald can be reduced on susceptible varieties by harvesting the fruit at proper maturity, moving the fruit into storage immediately after harvest, and providing adequate ventilation. Scald can further be reduced by wrapping the fruit with mineral oil impregnated paper or mixing similarly treated shredded paper with the fruit. The latest and most effective means to reduce scald is to dip or spray the fruit with a solution containing diphenylamine (DPA). DPA is registered for use and has a residue tolerance of 10 p. p. m. on apples.

Immediately after harvest fruit should be dipped in a solution containing 1,000 to 2,000 p. p. m. diphenylamine, and put into storage. In Wisconsin tests, both the 1,000 and 2,000 p. p. m. solution were effective. The fruit must be thoroughly drained in order to prevent injury that may occur from puddles left in the stem or calyx end of the fruit, or the bottom of containers. Thorough coverage is also essential. Growers using the material should keep accurate records as to harvest dates and storage dates, and should mark the containers that contain treated fruit.

Storage Tests With Apples Treated With Diphenylamine After 120 Days Storage (1)

Three apple varieties were selected to conduct a test for the prevention or reduction of storage scald. Fruit was harvested, treated one day later with DPA and placed in storage. After about 120 days in storage the fruit was exam-

ined for scald and tested for firmness. The difference in firmness and extent of scald reduction were consistent and demonstrated the effectiveness of the treatments used.

Variety	Treatment	Pres. [2]	% Showing Scald
Cortland	2,000 p.p.m. DPA	6.89	None
Cortland	1,000 p.p.m DPA	6.40	None
Cortland	Untreated	6.02	6%
Macoun	2,000 p.p.m. DPA	5.94	None
Macoun	1,000 p.p.m. DPA	5.82	None
Macoun	Untreated	5.78	2%
Secor	2,000 p.p.m. DPA	8.98	None
Secor	Untreated	8.14	None

(1) This test was conducted by G. C. Klingbeil at Waldo Orchards, Waldo, Wisconsin, in 1962-63. Samples were in triplicate, 90 apples per sample.

(2) Pressure tests with Magness-Taylor pressure tester, 15 apples per sample. Figures listed are averages of tests made on fruit showing no visible scald.

BILLBOARD POSTERS: There are still over half of the large billboard posters that were printed for the Wisconsin Apple Institute that have not been ordered by members. These should promptly be put to work to help maintain the reasonably good price Wisconsin Apple Growers have been getting this fall. At the price of $8 for members and $12 for non-members, plus imprinting and transportation, the price is very reasonable. Arrange for a billboard and then order the poster. Imprinting which would have the name and location of the orchard costs $2.50; transportation less than $1.00.

NATIONAL APPLE WEEK: October 10th to 19th is when a great deal of stress will be placed on the use of apples in many ways. The National Ap-

ple Institute through its apple kitchen provides much of the publicity that will be used this year. In addition to its all-out support of National Apple Week, it has provided $10,000 for billboard advertising in cooperation with the Kraft Division of National Dairy to further its caramel apple promotion. The Wisconsin Apple Institute is contributing to this and it seems that many more Wisconsin Apple growers should be a part of the Wisconsin Apple Institute.

RABBIT DAMAGE: While mice are much more feared than rabbits in the orchard, where snow is high rabbits can and do cause a great deal of damage. While rabbit hunting is fun it takes time and some are not too anxious to have hunting done in the orchard. It has been found that rabbits ordinarily travel in a comparatively small area unless chased. By live trapping the rabbits can be eliminated and a quick trip each morning soon determines the successful use of the live traps.

Mouse Control in Orchards

By Berkeley R. Peterson, District Agent Fish and Wildlife Service—USDI

The control of orchard mice is a continuing problem and control methods should be considered a regular orchard practice. Heavy damage from mice occurred in many Wisconsin orchards last winter. The mouse pouplation appears to be equally serious, if not more so, this winter. In view of this general increase in the mouse population, effective control methods are a must if mouse damage is to be kept to a minimum.

Mechanical and Cultural Aids: The protective wire guards are generally restricted for use on young trees. The placement of hardware cloth cylinders having three or four wires to the inch placed around the base of newly planted fruit trees is usually effective in protecting the tree against mouse injury for 5 to 7 years after planting. However, do not rely on wire guards entirely as it is not unusual for mice to either climb over or tunnel beneath the guard and girdle the tree. The hardware cloth should be 18 inches high and embedded in the ground at least two inches or on top of the trees root crown. Aluminum wrap, tar paper or other similar material wrapped around the tree also offers protection against mice and rabbits during the winter months.

The removal of ground vegetation limits the living area for mice and usually reduces mouse damage. The most important cultural practice is the clearing of a 3-foot radius around the base of the tree. This can be accomplished by scalping with mechanical equipment, by hand, or killing the vegetation with chemical weed killers. Mowing, discing or sod-chopping helps limit mice but care should be used not to leave cover directly around the tree base. Where pine mice or red-bellied mice (prairie wolves) are involved, the destruction of surface cover may have little influence on their underground activities. Snow cover for long periods can also give the mice the shelter they need. Cultural practices, although having definite limitations, should be considered whenever the mouse population is high.

Lethal Baits: Field mice can be destroyed by placing poisoned bait in mouse trails by hand, by hand broadcasting it or by using machines to either broadcast or place bait in mouse trails. Hand baiting in trails continues to be the most effective treatment, but is slow and laborious. Therefore, until better mechanical methods are developed we are stressing the HAND-BROADCAST METHOD with zinc Phosphide corn; oat bait. The hand-broadcast method is fast. A man can bait an orchard about as fast as he can walk up and down the tree rows. To treat, forcibly throw a small handfull of bait into matted grass within the drip area of a tree. Walk up a tree row and treat one side, then back on the other side.

This means two bait spots per tree. Bait sifts through the grass and mice readily find it. In throwing the bait, try to confine the spread to a spot about 1½ ft. wide. When averaging two bait spots per tree, the rate of application runs about 8 to 10 pounds per acre, except in young plantings.

If bait is applied by hand in trails, about three pounds per acre is needed.

We are recommending a bait consisting of equal parts of whole oat groats and No. 4 size cracked corn treated with two per cent zinc phosphide, using Lecithin as a spreader.

The best time for baiting is during October and early November. When signs indicate that mice are not numerous, thorough coverage of that orchard block may not be necessary. Treat the adjacent areas along with the portions of the orchard in which trouble usually occurs. During heavy, persistent snow cover, a few mice can cause serious damage. Thus it may be necessary to rebait in midwinter using strychnine grain. Place bait in snow tunnels, air holes and near fresh bark damage.

GROUND SPRAYS: The U. S. Fish and Wildlife Service does not recommend the use of endrin as a ground spray for field mouse control because the hazards are not fully known. Three parts per billion will kill fish and at the concentrations used for mouse control instances of wildlife and livestock losses have occurred. When endrin is used the area should be marked with warning signs. Do not use in areas where runoff will contaminate farm ponds, streams or other water supplies. Livestock should be excluded and should not be fed crops or hay cut from the treated orchard. Recommendations on the label must be strictly followed.

IMPORTANT: Before using endrin contact the Wisconsin Conservation Department as a permit is required.

APPLE PRINCESS: It seems odd to read in the August 31 "Packer" that Georgia has chosen their first "Apple Princess." Peaches we would expect, but why should Georgia be able to beat Wisconsin in this respect????

Malling and Malling Rootstocks

In Order of Dwarfing

Rootstock designation	Type of growth and other characteristics	Earliness of bearing
EM 1X	Shallow and brittle root	Early
MM 106	Good firm root system	Early
EM V11	Good fibrous root system	Early
EM 11	Good root of medium depth.	Medium
MM 104	Good root with firm Anchorage.	Medium
MM 109	Good root system, appears to resist drouth.	Medium
MM 111	Good root system	Medium
EM 1	Good root, grows vigorously.	Late
EM X1	Good root system and very hardy in known cold climates.	Medium

Prepared by Gordon Yates, LaCrescent, Minn. August, 1963

CARAMEL APPLES: Wisconsin Apple Growers should have an opportunity to sell apples to people who produce the caramel apples. The special reason for this is that the Krafts Foods Division of the National Dairy Products Corporation are promoting caramel apples on six headliner programs being given at more than 150 TV stations. Those reaching Wisconsin residents are in Chicago, Eau Claire, Green Bay, Madison, Milwaukee and Minneapolis-St. Paul.

ROADSIDE MARKETING: At the Roadside Marketing Convention held at Ohio State University, November, 1962, several interesting comments were made.

Mr. Knight of Rhode Island takes advantage of every opportunity to promote apples. He conducts organized tours of his orchard for school children and keeps a scrap book of letters received from them following their visit.

He keeps these available at his roadside stands for parents and children to view during later visits. Mr. Knight uses rotating turn tables which he finds most effective per foot of display space. He cleans the rooms at his roadside market with a vaccum cleaner which eliminates the dust problem caused by brooms.

Another man near Buffalo, N. Y. sold over 1000 painted pumpkins in a three week period in 1962. Painted faces on the pumpkins greatly stimulated sales compared with the sale of pumpkins for Jack-O-Lanterns only. About 30 to 50 painted pumpkins were kept on hand to make a good display. Besides painted faces on pumpkins he did the same on turban of buttercup, as well as scallop squash.

HARVESTING APPLES: It is easy to neglect proper care of apples after they are picked in the orchard or when they are removed from storage. This reminder from Prof. George Klingbeil tells us how important is the care at these periods.

If apples are left in the field for five days after picking at 70° F. their storage life will be reduced by half. It is important to reduce field heat as rapidly as possible after harvest.

Apples from young and very vegetative trees usually do not keep as well as apples from less vigorous trees.

When apples are removed from storage they should be kept cool. They ripen twice as fast at 40 degrees fahrenheit as at 32 degrees fahrenheit; at 50 degrees twice as fast as at 40 degrees and at 70 degrees twice as fast as at 50 degrees.

Winter Protection for Evergreens

George Ziegler, Extension Specialist Landscape Architecture

The coming winter may be a tough one for evergreens in Wisconsin.

Last season's severe winter coupled with a dry summer has left some of our evergreen plantings in a weakened condition. One way to help them would be to water them thoroughly now and keep them well watered until the ground freezes for the winter.

Evergreens, unlike other shrubs and trees, are never quite dormant. They do some growing all year—and water is needed to carry on this growth.

Soak the ground around the plants thoroughly and, if it is available, mulch with straw, marsh hay or grass clippings to help preserve this moisture.

No other protection is needed for the average evergreen planting. Wait until spring for the pruning and fertilizing.

Save some of those beautiful apples for the show at the 95th Annual Convention of the Wisconsin State Horticultural Society, Nov. 19 and 20, Fond du Lac.

The very cold nights last spring not only caused immediate loss of the apple crop on some trees, but a partial loss not immediately visible was sustained. The above photograph shows some of the apples seen at the George Premo orchard during the Wisconsin State Horticultural Society Orchard Tour, at Richland Center, August 6, 1963. Mr. Premo reported that this cold weather damage was May 23.

APPLE JUICE: The following article appeared in the Washington Daily News on July 3, 1963. This is evidence of further publicity resulting from the study done by Dr. William G. Way and Dr. Joseph M. Damron. This work was partially supported by National Apple Institute.

"Babies like apple juice better than orange juice. And they are able to handle it better too. That's the conclusion of two pediatricians at Winchester Memorial Hospital in the heart of Virginia's apple country. Dr. William G. Way and Dr. Joseph M. Damron, who studied 379 infants over a two-year period, said babies who drank apple juice had far less colic and far fewer rashes than those taking orange juice."

Have you marked Nov. 19 and 20 on your calendar for the Annual Convention at Fond du Lac?

Tracers Used in Pesticide Research

(From "Packer"—August 17, 1963)

Radioactive tracers are being used to determine residues of pesticides sprayed on fruits and vegetables.

The study is under the leadership of Dr. J. R. Geisman in the department of horticulture at the Ohio agricultural experiment station. It concerns washing techniques used in the preparation of fruits and vegetables for processing. Goals are to determine methods for reducing the amount of pesticide residues and to produce a high quality, nutritious product for the consumer.

A previous study has indicated that specially formulated low-foaming detergents are preferable. The compounds are recommended for use in the normal washing of fruits and vegetables from processing, since the concentration remains stable and complete removal is obtained by rinsing. This washing results in the removal of soil and other foreign material.

In one experiment, tomatoes sprayed with tagged dieldrin were washed in a detergent solution. The data indicated that for periods up to three days after application of the pesticide, the dieldrin could be washed from the fruits. This study also indicated that the concentration of the pesticide decreased with the passing of time. From three to six days after application, the pesticide residue was completely gone.

Are You?

Patronizing our advertisers? When you write them or their salesman calls on you, mention that you were glad to see their advertisement in WISCONSIN HORTICULTURE. These people not only have fine products but deserve your support.

Results of Chemical Weed Control in Strawberries

Ervin Denison, Horticulture Department Iowa State University. (From "The Fruit Press," January, 1963)

Ten herbicides were applied in 1961 to Cyclones. The most effective weed control was obtained with granular Premerge (8 lb./A), granular 2, 4-D (1½ lb./A), granular Diphenamid (3 lb/A), and granular Neburon (1½ lb./A). Other treatments which greatly reduced weed populations included Eptam, Falone, Zytron, Dacthal and Sesone. Simazine did not effectively control weeds.

The 1962 yields of Cyclone strawberries with various herbicide treatments (each applied twice)

1961 Treatment (lb. actual per A.)	1962 Production (Qts./A., 4 reps.)
1. Eptam granular—6 lb.	8,760
2. Premerge granular—8 lb.	8,687
3. Zytron granular—11 lb.	12,105
4. Dacthal granular—6 lb.	9,832
5. Diphenamid granular—3 lb.	8,590
6. Falone granular—6 lb.	9,237
7. Neburon granular—5 lb.	9,350
8. Simazine granular—3 lb.	8,140
9. 2, 4-D granular—1½ lb.	9,960
10. Sesone spray—4 lb.	9,357
11. Check	9,957

Pesticides Are Good

PESTICIDES are a great boon to mankind, Dr. Davis E. Price, Asst. Surgeon General of the U. S. Public Health Service, was quoted as saying in an article in **Today's Health** (Feb. 1963). The alarm of some persons that insecticides cause human and animal diseases is not shared by scientists who have studied insecticides, nor by the vast majority of physicians. Another PHS staff member, Dr. Wayland J. Hayes, Jr., said DDT is credited with saving at least five million lives during World War II.

Are Starlings a Nuisance?

Are starlings not only doing damage but chasing away your good birds? Live trapping is the easiest and most economical way to eliminate the super abundance of this undesirable species of birds. This same method is used to keep the crow population within reason.

Plans for this type of live trap may be obtained from Berkeley R. Peterson, Predator and Rodent Control, Fish and Wildlife Service, 670 State Office Building, St. Paul 1, Minnesota.

A man going through a cemetery saw this on a tombstone: 'Where I am now, you soon will be, Prepare yourself to follow me.' A previous reader had added this as a postscript: 'To follow you, I'm not content, Until I know which way you went.'

Middle age — the period in a man's life when he has more on his mind but less on his head.

Quiet Evening at Home???

Eldon S. Banta, Secretary,
Ohio State Horticultural Society

It was April 30—or was it May 1? Anyway, the evening was cool and crisp. The moon was shining crystal clear. The afternoon breeze had settled and not a leaf rustled. The burning wood in the fireplace spent its warmth throughout the living room. Reading on this quiet evening was a pleasure, and a comfort, after a day in the chilly winds.

Outside, it was beautiful. As the night hours wore on, Mother Nature gently, quietly laid a sparkling white blanket down over her landscape, as if she were protecting the tender plants from the cold. Hour after hour the temperature dropped, and the sparkling white blanket grew thicker and thicker —until Old Sol began to poke his bright, shiny face above the horizon. His bright rays touched the sparkling white blanket and it disappeared instantly. All of this was done so silently; no trumpets, no fanfare, not even the breaking of a twig or the falling of a leaf disturbed the stillness of the night and the early morning moments of time.

When Old Sol made the sparkling white blanket disappear, you might expect Mother Nature's children to wave their leafy arms gleefully, or to raise their shiny little faces in prayerful thanksgiving. But not so, not this time. Little Miss Tomato's leafy arms dropped and looked as though some Hellion had singed her fingertips. The strawberry brothers, their cousins and even their distant relatives, the apples, looked sad, so sad. Some even hung their heads in shame—never to look Old Sol in the face again.

It looked like the time for heavenly account had come for myriads of Nature's little children — little budlings nipped before they even knew what a wonderful world was in store for them. One Little Strawberry hid his fuzzy yellow face under a leafy pillow the night before. Now, in early morning he could see out and around him. All his brothers and cousins, up and down the row were stealthily quiet. He stretched up a little so he could see farther and farther around him. To his astonishment, all those who had not tucked their faces beneath leaves were turning color—their whole faces were changing. It wasn't the redness of embarrassment, but the brown and blackness of death. He looked up to his distant relatives, the apple tree, and saw almost the same black situation. Never in his life had Little Strawberry gone to so many funerals of so many of his relatives—from brothers to distant cousins.

National Apple Week, October 10 to 19, 1963

Many more growers should use the good public relations plan of taking a choice package of apples to their local newspapers, radio and television stations—at least once in a while. Just tell them that you want to keep them in good health. By all means do this about the first of October, with a note that October 10th to 19th is NATIONAL APPLE WEEK. You SHOULD have a card attached to the package so those who enjoy your gift will know who the donor is.

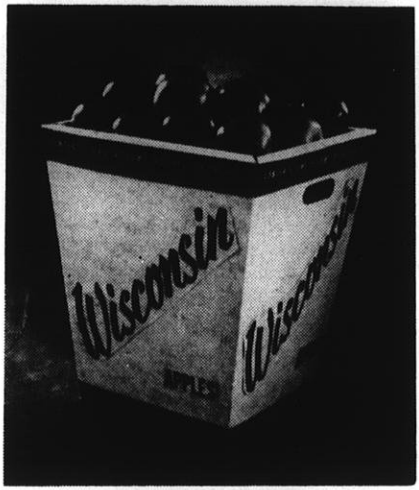
Where several commercial growers live near a center where one or more newspapers are published, or where radio or TV programs are broadcast — a group effort in advertising during NATIONAL APPLE WEEK should be worthwhile.

During NATIONAL APPLE WEEK have your children take at least one apple a day to the teacher, with a reminder of the occasion. Those children whose parents do not grow apples may get the idea that they too should have some apples—Nuff said??

Don't let people forget the health value of eating apples.

NEW ECONOMY APPLE BOXES

Beautifully Designed: Base Color — Coral White



BUSHEL SIZE

Printed Red and Green!

All 200 lb. Test Corrugated

Prices on Bushel Size

499 or less	29½¢ each
500 - 999	28¾¢ each
1,000 - 2,000	28 ¢ each
2,001 - 5,000	26½¢ each
5,001 & Over	25 ¢ each

NOTE: Your **ORCHARD NAME** can be printed in place of "Wisconsin" at **NO** additional charge — only net cost of making printing dies.

One Half BUSHEL SIZE

Prices on ½ Bushel Size

499 or less	14½¢ each
500 — 999	13¼¢ each
1,000 — 2,000	12½¢ each
2,001 — 5,000	11¾¢ each
5,001 & Over	11 ¢ each

Allow three weeks for delivery.

All prices F. O. B. Oconomowoc.

All boxes come already stitched one side, bottoms are sealed by glueing, taping or stapling.

Sold & Distributed by

Wisconsin Orchard Supply Company

704 Concord Road — Oconomowoc, Wis.
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Concentrated Apple Juice Seen in Future

A concentrated apple juice may someday join similar citrus products on grocers' shelves, says Dr. Anthony Lopez, food technologist at Virginia Polytechnic Institute. And when that day comes, researchers at VPI will have helped bring it about.

Twelve hundred gallons of fresh apple juice were recently transported to Florida where it was concentrated in a plant using a new electronic process. The product was packed in six ounce cans and returned to VPI. It has undergone taste tests by a panel of experts with favorable results. Tasters say it is hard to distinquish between the fresh juice and the reconstituted concentrate.

Researchers will test shelf life of the new product at various storage temperatures. It will be evaluated by appropriate chemical, physical and bacteriological methods, says Lopez.

The new process was originally developed for concentrating citrus juices. It is based on the principle of dielectric heating. Heat is generated within the juice by directly exposing it to electronically created high frequency energy. In a vacuum system, the heat caused most of the water in the juice to evaporate at a low temperature. It takes place at about 60 degrees fahrenheit, thus avoiding flavor-damaging effects of higher temperatures.

Lopez says, "We feel that a good apple juice concentrate could become an important industrial product, and help market the apple crop. This would contribute to the progress of the agricultural industries."

This work is being done in cooperation with Murray Orchards, Roanoke; the Well-Lord Engineering Company, Lakeland, Florida; and the Virginia State Horticultural Society.

—From "Eastern Fruit Grower"

Variety Key to Future Success and Profit

Twenty-two Hudson Valley apple growers, two chain store buyers and several professional pomologists met at Cornell University recently to discuss the general subject of marketing their crop. In discussing varieties, this group suggested that Hudson Valley orchardists produce the following varieties and in the following percent during the 1970's:

Varieties	Percent
McIntosh	30
Cortland	5
Jonathan	5
Spartan	5
Red Delicious	25
Golden Delicious	15
Idared	10
Rome	5

T. E. LaMont, Secretary of New York State Horticultural Society, reports that if New York growers follow this advice, there will be a decided drop in the amount of McIntosh produced in that area of the state. At the present time slightly more than 50% of the crop produced in New York's Hudson Valley is McIntosh.

— Hoosier Horticulture Newsletter

Food for Thought

Notes of interest about favorite delicacies and dishes of international fame awaiting you in your European travels.

TRUFFLES: There is probably no food more mysterious and exotic in quality in all the world than the truffle, a true native of France.

Somewhat like a mushroom, with a similar texture, truffles are round, ringed and black; they range in size from that of a pea to an orange and impart a unique flavor and aroma to meats, poultry, vegetables and sauces. Often referred to as "Black Diamonds," they are rare, precious and expensive.

Truffles are found and "hervested" in a most unusual way: The lowly pig is

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used to scent them out and dig up the truffles, which grow a few inches underground in the shade of certain oak trees. Small sows seem to be the most experienced and reliable sniffers, excelling certain kinds of dogs which also have the gift. The human nostril is powerless to scent the prize.

With a chain around her neck, the little she-pig leads her master from one mysterious cache to another. Once she scents her truffle and starts to dig, a tap on her snout with a cane sends her off to seek out another prize, with a reward of a handful of corn or a few scraps of truffle to maintain her morale. A farmer may find a wealth of truffles on his land one year and absolutely nothing the next. Why and where they grow are part of the systery. — From National Ass'n Retired Persons.

Your Customers Response

Does your customer come to you with a smile? What did he or she see that caused the smile? Was it yours plus a happy greeting? 'Tis often said that sugar attracts more flies than vinegar. When a person tastes good candy or a good apple, he usually smiles—did you ever see one smile when tasting vinegar?

Some days you may question the statement that it is easier to smile than to frown. It takes 52 muscles to frown and only 13 to smile. Conserve your energy!

S—miles	**F**—rowns
M—ean	**R**—educe
I—ncreasingly	**O**—ur
L—arge	**W**—ages
E—arnings	**N**—ow

The smiles that make us happy
Come from customers who returned
To say — "I'm here again
Because from you I learned,
That GOOD APPLES are a bargain
A good price I'm glad to pay
My family's health's improving
We eat apples every day.

Annual Convention

LADIES' PROGRAM — SUN ROOM
RETLAW HOTEL

November 19

9:00-10:00—Registration in Sun Room. Display of Hobbies.
10:00—Explanation of hobbies brought by members.
11:00—Judging of Apple Desserts.
11:45—Assemble in lobby for luncheon.
12:15—Luncheon — Announcement of prize winners of the apple dessert contest.
2:00—"Do It Yourself Decorations" — Mrs. Leroy Meyer.
3:00—Business Meeting.
4:30—Afternoon Refreshments.
6:30—Banquet—Ballroom—Retlaw Hotel.

Ladies, when you come to register, will you please bring your desserts to enter in the contest? If possible, those desserts should be suitable to serve at the afternoon tea. Contest desserts should be accompanied by the recipe.

If you have a hobby that you enjoy, won't you share it with the rest of us by bringing a sample of your work.

Wisconsin Horticulture

VOL. XLVIII OCTOBER, 1963 NUMBER 6

95th ANNUAL CONVENTION

WISCONSIN STATE HORTICULTURAL SOCIETY
WISCONSIN APPLE INSTITUTE
WISCONSIN BERRY GROWER'S ASSOCIATION

Hotel Retlaw, Fond du Lac, November 19-20, 1963

TUESDAY, NOVEMBER 19

9:00 A. M. Motion picture on berries.

10:00 A. M. Panel—Raspberries in Wisconsin—Viruses and Virus-Free plants. By Dr. Frank Gilbert, Sturgeon Bay and Mr. Abe Epstein, Wis. State Dept. of Agriculture. Moderator: Prof. George Klingbeil, Univ. of Wis.

10:30 A. M. Strawberry Winter Injury. Dr. Malcolm Dana, Hort. Dept. Univ. of Wis.

11:00 A. M. Strawberry Weed Control. Dr. E. L. Denisen, Iowa State Univ. Hort. Dept.

11:45 A. M. Luncheon—at place of your choice.

Afternoon Program — Continued on 3rd Floor

1:00 P. M. ANNUAL MEETING, Wis. Berry Grower's Ass'n. Pres. Albert Ten-Eyck Presiding. Sec. Mr. Harvey Smith.

1:30 P. M. Rotation and Fertilization for Berries. By Prof. John Murdock, Dept. of Soils, Univ. of Wis.

2:15 P. M. Progress in Strawberry Growing. By Dr. E. L. Denisen, Iowa State Univ.

3:00 P. M. Weed Control with Dacthal—by representative Diamond Alkali Co.

3:00 P. M. Review of Nursery Law changes, by Mr. Arthur Kurtz, Chief, Div. of Plant Industry

PROGRAM FOR APPLE GROWERS

Ballroom — Retlaw Hotel

1:00 P. M. Business Meeting. Election of Officers. Pres. Frederick Meyer, Presiding.

2:00 P. M. Partnerships and Corporations. Prof. Sidney Staniforth, Farm Management Specialist—Univ. of Wis.

2:45 P. M. Dr. R. H. Roberts says —

3:30 P. M. Our Product and the Consumer. By Miss Doris Staidl, Consumer Marketing Agent, Green Bay, Wisconsin.

4:30 P. M. Social Hour. Tea and Apple Desserts served by the Women's Auxiliary.

BANQUET

6:30 P. M. Banquet. Toastmaster, Mr. Elroy Honadel, Oak Creek, Wis. Presentation of Honorary Recognition Award. "Plants and People I Saw in the Soviet Union." Illustrated with slides, by Dr. L. G. Holm, Univ. of Wis.

WEDNESDAY, NOVEMBER 20

9:00 A. M. Motion Picture—Safe Use of Pesticides.

9:20 A. M. Organization for Better Marketing. By Robert Heffernan, U. S. D. A., Washington, D. C.

10:15 A. M. Fruit Research in Progress at Sturgeon Bay, by Dr. Frank Gilbert.

10:45 A. M. Discussion of Labor Law changes. By D. N. Ajer, Director, State Wage and Hour Division, Wis. Industrial Commission.

11:15 A. M. Wis. Apple Markets; Information and Promotion Efforts. By Mr. W. T. Reese, Wis. Dept. of Agriculture.

JOINT LUNCHEON

12:00 LUNCH TOGETHER. Talk with slides on Protecting Apple Quality after harvest. By Dr. A. L. Ryall, Chief Hort. Crops Branch, U. S. D. A.

1:30 P. M. Business Meeting—Wis. Apple Institute. Election of officers, Committee reports.

2:15 P. M. "Feed Those Hungry Mice." Illustrated with slides, by Mr. Berkeley Peterson, Dist. Agent, U. S. Fish and Wildlife Service, St. Paul.

FRUIT SHOW

Retlaw Hotel, Fond du Lac, Wisconsin
NOV. 19 - 20, 1963

First Prize $3.00
Second Prize $2.00
Third Prize $1.00

Grand Champion $3.00

Reserve Champion $2.00

In addition to cash prizes, ribbons will be awarded all winners.

The shows Grand Champion will be awarded a large gold trophy.

Entries shall consist of a plate of five specimens of the following varieties:

1. McIntosh
2. Cortland
3. Red Delicious
4. Golden Delicious
5. Jonathan
6. N. W. Greening
7. Connell Red
8. Haralson Victory Redwell or Prairie Spy
9. Spartan, Secor Kendall or Ida Red
10. Any other variety.

Fruit will be judged as follows:

Freedom from blemish	30%
Uniformity	25%
Color	20%
Size	15%
Form or trueness to type	10%

All entries must be in place by noon, Nov. 19. Plates will be furnished.

1963 OFFICERS AND DIRECTORS
WISCONSIN STATE HORTICULTURAL SOCIETY

President: Mr. Frederic Meyer, Waldo; Vice President, Mr. Walter Clemens, Mequon; Sec'y-Treas., Mr. S. S. Mathisen.

DIRECTORS: Mr. Willard Wagner, Mrs. Arthur Bassett, Mr. Norbert Schachtner, Mr. Carroll Krippner, Mr. Gerald Fleming, Mr. Jack Wallhaven, Mr. Jerry Flynn, Mr. Walter Clemens, Mr. Howard Erickson.

1963 OFFICERS AND DIRECTORS
WISCONSIN APPLE INSTITUTE

President: Mr. George Premo, Richland Center; Vice Pres. Mr. Albert TenEyck, Brodhead; Sec'y-Treas. Mr. S. S. Mathisen.

DIRECTORS: Mr. Don Palmer, Mr. George Premo, Mr. Ralph Young, Mr. Don Grun, Mr. Dan Van Elzen, Mr. Albert TenEyck, Mr. E. A. Erickson, Mr. Henry Mahr, Mr. James Kegel, Mr. Willard Nieman, Mr. James Frostman and Dr. Don Rawlings.

WOMEN'S AUXILIARY PAGE

Apple Recipes

By Mrs. Fred Meyer, Waldo

During the past year the officers and board members of the Wis. State Horticultural Society, with their wives, met monthly at the home of Mr. and Mrs. Walter Clemens of Mequon and enjoyed their hospitality. It was a central meeting point and we all got to know each other better. We women always got around to recipes. Mrs. Clemens is quite a collector. I can't understand why Walter doesn't gain weight!

My husband Fritz has been on the Board of Directors or an officer of either the Apple Institute or the Society ever since we have been married. So naturally, we'll shed a few tears and miss our association with the organizations. We wish to thank every one with whom we have worked for their co-operation. It has been very rewarding and very much worth while. Our best wishes go to the incoming officers and we hope there will be continued interest and growth in the two organizations.

Apple Kuchen
(Custard Apple Surprise)

This Kuchen has a custard base, so don't be alarmed if everything seems to float when first combined. It is a very un-rich, nourishing, every day apple dessert .

Mix: ½ C. sugar, 1 egg, 1 T. butter

Add alternately: 1 C milk, 2 C flour (scant), 2 t. baking pwd. Put in buttered 9x13 pan. Slice apple, inserting in the dough in rows. Mix together and pour gently over:

3 eggs beaten; ½ C. sugar—1½ C. milk. Sprinkle with nutmeg or cinnamon.

Harvest Torte
(Rich, Filling and Crunchy)

Combine all ingredients — stir until thoroughly mixed—do not beat.

4 C. diced tart unpared apples
1 C. sugar.
½ C. sifted flour—2 t. baking powder.
1 egg. 1 T. melted butter.
1 t. vanilla—½ C. coarsely chopped walnuts—½ C. dates, cut up.

Turn into a buttered 8x8x2 in. pan

ANNUAL CONVENTION

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If you have a hobby that you enjoy, won't you share it with the rest of us by bringing a sample of your work?

and bake in a hot oven (400) 40 minutes or until apples are tender. Cut in squares. Serve hot or cold with whipped cream, cream or vanilla ice cream.

OFFICERS — WOMEN'S AUXILIARY

President: Mrs. Fred Meyer; Vice Pres. Mrs. Walter Clemens; Sec.-Treas. Mrs. LeRoy Meyer.

DIRECTORS: Mrs. Howard Erickson, Mrs. Carol Krippner, Mrs. Willard Wagner and Mrs. Arthur Bassett.

TIE CLASPS: On as many occasions as possible when apple growers appear in public, they should be wearing a tie clasp with the red apple on it. Certainly every man who attends the Annual Convention should have a tie clasp whether he wears a tie or not. The cost is 75¢ for one, postpaid or three for $2.00. The price list of all our promotion material was carried in the September Wisconsin Horticulture, page 3.

Reserve Your Room for the Convention

Write the Hotel Retlaw, Fond du Lac, Wisconsin for your room reservation soon. The rates are as follows: Rooms without bath, single: $3.75; with double bed for two: $6.00. Single room with bath: $5.50; $6.00 and $6.50. Room for two, double bed and bath, $7.75; $8.50 and $9.50; with twin beds and bath: $9.00, $10.00 and $13.00.

Auxiliary Luncheon

Mrs. Fred Meyer writes that the noon luncheon for the ladies at the convention will be held in the Colony Restaurant, which is a short walk from the Hotel Retlaw. This luncheon is always a pleasant occasion.

Mrs. H. J. Rahmlow, wife of the former Secretary, who had charge of registration for a number of years,

(Ccontinued on page 9)

HOW TO SELECT FRUIT FOR EXHIBITION

G. C. KLINGBEIL, Ext. Spec.
Fruit Production, University of Wis.

Apples

The two most common methods for showing apples in exhibition or in competition are the plate and the tray. The plate consists of five apples, four placed on the plate stem end up with the fifth apple resting on the other four. Usually a white, plain, eight-inch paper plate is used. The tray is a flat wooden box with inside dimensions 18 x 11½ x 2¾ inches filled with one layer of fruit packed either in horizontal or diagonal rows. A tray requires about a peck of apples.

It is well to know the points of perfection used by the judge in scoring the exhibit. The following score card is commonly used in scoring apple exhibits.

Points	Perfection
Condition	30
Uniformity	25
Color	20
Size	15
Form	10
Total	100

Explanation of the Score Card

Condition

All specimens should be free of all insect or disease damage. They should be free of bruises, punctures, and hail marks. The stems must not be removed. The fruit must be firm and as mature as possible. A soft cloth should be used to polish each apple.

Uniformity

All specimens should be uniform in shape, color, and size.

Color

With all red varieties select highly colored specimens. Preference is usually given to exhibits having the most attractive color. With non-red varieties such as Golden Delicious and Northwestern Greening a blush is not desirable unless all specimens are uniform in color.

Size

Large size is not the criterion of a good apple. Specimens slightly larger than average are most desirable. Medium-sized varieties such as McIntosh should be about two and three-fourths to three inches in diameter.

Form

Every variety has a characteristic shape or form. Delicious is conic with five crowns on the shoulders at the calyx end. Cortland is oblate or somewhat flattened at the stem end and is corrugated near the calyx. The form of each specimen should be typical of the variety.

INDIANA ORCHARDISTS VISIT ILLINOIS AND WISCONSIN

By Jerome Hull, Jr., Purdue University

Approximately 125 people attended the summer tour of the Indiana Horticulture Society July 17 and 18. On July 17 we toured Bells' Mossley Hill Orchards, Lake Zurick, Illinois and on July 18 we visited Thompson Orchard and Strawberry Farm, Kenosha, Wisconsin.

An extremely interesting feature at Bell's Orchard was the pick-your-own system of marketing. John and his son, John Jr. did an excellent job of describing how they have built this phase of marketing into a very successful enterprise. Factors involving customer relationships were also thoroughly discussed. Many customers are utilizing a trip to Bell's Orchard as a family outing, not just an opportunity to pick fruit. Cultural practices have been modified to accommodate pick your own selling. Smaller trees and orchards free of any debris, weeds or bush choppings lend themselves favorably to customer picking.

The young dwarf planting stimulated much discussion. The soil preparation prior to planting, close tree spacing, and subsequent training were interesting features to many Indiana growers. This certainly should be a high producing block of trees within the next few years.

It was only logical that Indiana orchardists should be interested in Bell's method of saving his crop from spring frosts. The demonstration of the wind machine was rather academic for many growers since the high cost of investment and the limited area of protection restricts its possibilities in Indiana. However, the use of helicopters hovering about 50 feet above the trees presents a flexible and economical approach to frost control. Likewise the practice of burning kerosene in old paint cans for orchard heating was also of interest.

Frost Protection

Old 5 gallon paint cans are distributed one per tree throughout the frosty area of Bell's orchard. These are filled ¾ full with kerosene. When the temperature drops to approximately 34° and weather forecasts indicate frost conditions approaching, the cans are lit. Spilling about a handful of gasoline on top of the kerosene facilitates lighting. The lid of the can is pulled back until about ¼ of the top surface is open. Naturally if severe cold conditions occur the can opening can be increased to provide more heat. Bell stated that when the lid is removed a can will burn approximately 6 or 7 hours. The length of time depends upon wind and other conditions. John warned Indiana growers that it is important to keep water out of the cans. Otherwise, when the kerosene burns down close to the water in the bottom of the can, the water will heat and boil over, spilling flaming kerosene onto the ground and can set the orchard afire. The cans are filled and placed on a pallet. A tractor with fork lift quickly hauls them throughout the orchard. Bell finds this to be an effective economical frost prevention measure.

Bell's outstanding roadside market also was a scene of intensive note taking by many Indiana orchardists. Approximately 35,000 bushels of apples are sold annually at this local roadside market. The market is open the entire year.

Visit Thompson Orchards

The tour at Thompsons Orchard in Kenosha, Wisconsin, again featured local sales. Pick-your-own marketing is utilized for strawberries and cherries. All apples produced in their 80 acre orchard are sold through their local roadside market.

(Continued on page 14)

WISCONSIN HORTICULTURE

Published monthly excepting July and December by the Wisconsin State Horticultural Society and the Wisconsin Apple Institute.

Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

S. S. Mathisen, Editor, 1542 So. 82 St., West Allis 14, Wis. Phone—BL 8-1755.

EDITORIAL

Sec. Sid Mathisen has asked me to prepare this issue of Wisconsin Horticulture. In late September he went to Florida to supervise an experiment on using certain kinds of mineral elements in growing tomatoes by the hydroponic method. Sid will be back for the convention and plans to get out the November issue. I have agreed to relieve him in Florida during that period.

It does seem like old times to again do this work—after having done it for 30 years. I have enjoyed very much visiting with a number of fruit growers this summer and meeting many more at the summer meeting at Richland Center. Wisconsin looks like the "Land of Milk and Honey" **and Fruit,** during the summer months.

I am impressed with the way a new generation has taken over the fruit growing industry. Many of the men who were leaders in the industry and the Society when I first became Secretary have retired or passed on. It is encouraging to see their sons doing such a splendid job of developing commercial fruit growing.

I am sure you will all agree with me that Mr. Mathisen has done a splendid job this past year and I know you all hope he will return when his project is completed.

In the meantime he has asked the Board of Directors to select a new Secretary at the annual convention. If you know of anyone please contact one of the officers.

About mid-October Mrs. Rahmlow and I will return to 4543 Carson St. No. in St. Petersburg where we will be busy all winter with many activities including growing about 120 kinds of tropical plants.

Best wishes to you all!

Henry J. Rahmlow

17th ANNUAL MEETING
WISCONSIN STATE
HORTICULTURAL SOCIETY
and the
MINNESOTA FRUIT GROWERS ASSOCIATION
December 9-10
Holiday Inn Motel, LaCrosse, Wisconsin

Featured speakers will be Dr. Dwight Powell of the University of Illinois and Dr. H. B. Tuckey, Past Chairman, Dept. of Horticulture, Michigan State University.

Mark your calendar now. Program in next issue.

OFFICERS
WISCONSIN BERRY GROWERS ASSOCIATION

President: Albert TenEyck, Brodhead; Sec.-Treas. Harvey G. Smith, R. 1, Kenosha.

DIRECTORS: Gilbert Brooks, Plainfield; Harry Barliment, Green Bay; Wm. Nalvard, Oostburg; Albert TenEyck; Frank VanLare, Oconomowoc; John Lyons, Waukesha; Gene Vincent, Genoa City; Stuart Pederson, Warrens, Wis.

AUXILIARY LUNCHEON — from p. 5 wishes to send greetings and best wishes to all the ladies of the Auxiliary. She says, "I always enjoyed those teas, the program and meeting with all the members."

APPLE STANDARDS REVISED

The U. S. Department of Agriculture announced on Sept. 3, 1963, revised U.S. Standards for Apples.

USDA's Agricultural Marketing Service said this is the first full-scale revision of the apple standards in 12 years, and is designed to make them more useful to the industry under current handling and marketing practices.

The new standards include a more practical U. S. Extra Fancy grade, eliminate the U. S. No. 1 Cooker grade, and require U. S. Extra Fancy and Fancy grades of apples after Jan. 31 following the year they were produced to be free from damage by invisible watercore. The revision will be published in the Federal Register Sept. 5, and will become effective Sept. 20.

The U. S. Extra Fancy grade revision carries less restrictive shape, color, and defect requirements, to make it more practical for volume use. Increased use of the U. S. Extra Fancy grade should help reduce the confusion among buyers resulting from use of several different "Extra Fancy" grades with differing requirements.

The new requirement on watercore is based on a similar requirement in Canadian apple standards, and represents a step toward coordinating standards of the two countries to facilitate overseas exports from both countries as well as two-way trading in apples across the common U. S.-Canada border.

The revised standards also double the required percentage of higher-grade apples in any "combination" apple pack. For example, a U. S. Extra Fancy and Fancy combination must now contain not less than 50 percent Extra Fancy apples rather than the 25 percent formerly required.

"Packing requirements" in the standards are redefined to apply to current packaging practices, and the "U. S. Condition Standards for export" may now also be called "U. S. Condition Standards." They must be used for domestic shipments as well as export lots.

The bulletin "United States Standards for grades of Apples" may be obtained by writing the U. S. Dept. of Agriculture, Agric. Marketing Service, Washington, D. C.

New Man Coming

Dr. Malcolm Dana informs us that a new man will soon join the staff of the Dept. of Horticulture to work in the area of fruit research. He will use the farm as a field laboratory investigating such problems as nutrition, mechanical harvesting, thinning, pruning, pre-harvest sprays, etc.

By H. J. Rahmlow

FARM FIELD DAY

A visit to the new Wisconsin Experimental Farm

Have you seen your "other farm," the new 2,034 acre University of Wisconsin experimental farm south of Arlington and north of Madison? If not, plan to attend a farm field day next year. You will be amazed at what one can see and learn.

Each branch of agriculture: horticulture, dairying, beef cattle, agronomy, poultry, turkeys, hogs, entomology, etc. has a farm of its own, with complete equipment for research.

On October 2, the "Fall Field Day" was held. Thousands attended. Cars were parked in a field at farm headquarters where field demonstrations of farm crops were seen. What is being done with corn varieties, disease control, soy beans, sorghums and weed control was most impressive. There were exhibits to be seen at each farm. The new completely automatic poultry houses where egg production tests are being conducted amazed us.

The Horticultural Research Farm

The new Horticultural Research Farm under Prof. O. B. Combs, is making noteworthy progress. The farm has more than 100 acres of land; a new modern building with laboratories for research, meetings and classes. We were impressed with the work being done in vegetable and tobacco improvement, weed control, fruits and ornamentals.

Work With Fruits

The work with tree fruits is just getting well started and will be a long term project. Dr. Malcolm Dana told us about the project of testing McIntosh red and golden Delicious on root stocks of Malling I, II, VII and IX. Also on Malling-Merton 104, 106, 109 and 111. The first planting was done in 1960 with additional trees planted as they became available. Winter injury to some of these trees was discussed in the June issue.

Dr. Dana mentioned that trees on Malling IX had been staked to prevent leaning while young and pointed out that unstaked trees on M. VII were leaning due to strong winds.

Strawberry Weed Control

An important project is strawberry weed control tests with chemicals on one-half acre of Robinson and Sparkle. Plants were set 5 x 5 feet. Pigweed and Foxtail seed was sown over the plot which was then treated with 35 different chemicals and combinations, about one week after sowing the seed. Sesone and Dacthal looked good and are considered standard for strawberry weed control. Dr. Dana recommends that they be used about two weeks after setting out new plants and repeated along the rows where cultivation cannot reach the weeds. A new chemical not yet registered for strawberries by the U. S. D. A. has been found to give excellent control. It will not be recommended for use on strawberries, however, until approved.

We can see a new era in horticulture research. No longer will fruits be produced and sold commercially on the experimental farm, because high cost of labor precludes making a profit. Instead, problems confronting growers will be studied and technical research carried on.

The Arlington Prairie on which this new experimental farm is located, is one of the finest farming areas in the state and perhaps the nation.

A man owned a bird dog that he claimed was the world's greatest. One day he was walking down the street with the dog when suddenly it froze in the traditional bird-in-the-grass pose as a man with a shopping bag in his arms approached. "Do you happen to have a game bird in your bag?" the dog owner asked. "No," replied the man, "but my name is Partridge!"

MOUSE CONTROL
How to Obtain Permit to Use Endrin

By Geo. C. Klingbeil

Because of the continued high population of meadow mice in Wisconsin orchards this year, most of you will be doing some type of control. Some orchardists have indicated that they would prefer to use endrin rather than the baits.

Under Chapter 29.60 (5) (c), the Wisconsin Conservation Department and the Wisconsin Department of Agriculture are authorized to issue joint rules regarding use of poisons and explosives in rodent and nuisance bird control. Wisconsin Conservation Department 12.01 issued jointly by the Wisconsin Conservation Department and the Wisconsin Department of Agriculture became effective November 1, 1962.

The rule states among other things that no permit is necessary when rodents not classified as game or fur-bearing animals are destroyed by means of poisons, poisoned baits, explosives, dynamite, or poison gas WHEN USED IN SUCH A MANNER THAT GAME ANIMALS, OR FUR-BEARING ANIMALS OR WILD BIRDS WILL NOT BE DESTROYED THEREBY.

The use of endrin, an extremely toxic material with a considerable residual effect, in orchard mouse control presents a definite potential hazard to other forms of animal life. AT THIS TIME, no one can state that no other forms of life would not or could not be destroyed by its use in orchards. Its use for orchard mouse control has been barred in Ohio.

Recognizing, however, the nature of the mouse situation this year, and the economics of control measures, the two departments have decided to issue permits again this year. SUCH PERMIT IS APPLIED FOR AND OBTAINED FROM THE WISCONSIN CONSERVATION DEPARTMENT. The permit is not to be construed as a hindrance to you in orchard mouse control. It is your PROTECTION against prosecution in the event of a possibility of destruction of game or fur-bearing animals IF THE CONDITIONS OF THE PERMIT ARE OBSERVED IN APPLICATION OF THE MATERIAL. There is no charge for the permit.

Applications for a permit should be addressed to: Wisconsin Conservation Department, Box 450, Madison, Wis.

Rates of applications and other safety precautions which must be followed will be outlined in the permit. They are believed to be sufficient to give good control for meadow mice, and also reduce the hazard to protected wildlife. It will also be necessary for the permittee to post his land with adequate signs which warn the public that poisons have been applied.

Apple Maturity Tests

California apple maturity test requirements, furnished us by the University of California, are as follows:

Apple Variety	Soluble Solids	Pressure
Red Delicious	11%	18 lbs.
Golden Delicious	12%	18 lbs.
Jonathan	12%	19 lbs.
McIntosh	11.5%	19 lbs.

the soluble solids test and the pressure test may be applied on the basis that a one-half percent increase of soluble solids will compensate for a one-pound increase in pressure test, or a one-pound decrease in pressure will compensate for one-half percent decrease in soluble solids, or other amounts of change that are proportional to this rate of change.

(Eff. 8/25/63)

INDIANA GROWERS VISIT WISCONSIN

(Continued from page 7)

Thompson told Indiana growers that parking problems must be considered in any pick-your-own operation. When planting their strawberries, Thompson generally leaves a parking area of four to five acres to accommodate 500 cars for approximately every 12 acres of strawberries. Weed control in Thompson's strawberry fields is achieved primarily with a Howard Weeder plus an innovation of the Friday strawberry tractor. Sesone is also used for chemical weed control in young plantings and 2,4-D in plantings after harvest. Strawberry fields are usually kept for two fruiting seasons.

Sudan grass is sown on land the year prior to planting. This is followed with oats, which is cut before heading to avoid a grain problem the next season. Irrigation is practiced within the limitations of Thompson's pond system. Irrigation during the May freezes this year saved the strawberry crop. They utilized about six miles of pipe, much borrowed from neighbors during the May frost. While Robinson has been their most profitable strawberry, they also grow Earlidawn, Catskill and Sparkle.

From Hoosier Horticulture Newsletter

Fruit Rots in Illinois Orchards

We have noticed that more growers are using a sanitation program to reduce fruit rots. It works too. In the orchards where the dead limbs have been removed from both the trees and the orchard, there is rarely any rotten fruit. On the other hand, orchards where dead stubs, old fire blighted twigs or prunings are left in the trees or where the prunings are chopped and left in the orchard, fruit rots are easy to find. In some of these cases rot is a serious problem. (From Illinois Horticulture, by Frank W. Owen, University of Illinois.)

Virus-Free Raspberries

(From "Agricultural Research", March 1962)

Virus-free raspberry plants that produce four times as much fruit and three times as many sturdy canes as commercial planting stocks of the same variety have been found by USDA and State scientists.

After the number of virus-free plants is increased by USDA, they will be made available to nurserymen through State agricultural experiment stations and other State agencies.

Red raspberry stocks free of mosaic viruses include Canby, Cuthbert, Durham, Indian Summer, Milton, Newburgh, Rideau, September, Taylor, and Willamette. Mosaic-free black stocks: Bristol, Cumberland, Dundee, Morrison, and New Logan.

When virus-free material is made available to nurserymen, it will mark the first time that known virus-free stocks of these varieties have been generally available in the U.S.

The time required to build up enough virus-free stock for supplying the States will vary with varieties. Stock of some varieties has already been furnished for increase to States where the varieties are adapted.

Quack Grass Control in Raspberries

Simazine (80%) can be used for control of quack grass in raspberries, says George Klingbeil. It must be applied in the fall—October and early November, not to exceed 5 lbs. of the chemical per acre. Use 5 level tablespoons in enough water to cover 500 square feet on small patches, which is the same as when applied at the rate of 5 lbs. per acre.

Spray or sprinkle the chemical on the quack grass. It will not injure the raspberries but one should avoid sprinkling them.

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THE 1963 WISCONSIN APPLE SITUATION

By Marlon Schwier

As of October 1, 1963, these are our observations on the 1963 Wisconsin apple crop.

1. The 1963 Wisconsin crop may well be our lightest crop in more than 15 years. It may not reach 1 million bushels. Extreme winter conditions plus a late spring frost in all areas, except the Far North and Northwest, apparently did more damage than was realized. In addition, climatic conditions this summer, particularly dry weather and hail, further reduced potential yields.

2. Quality-wise, Wisconsin, in all areas, is harvesting one of the finest crops on record. Most all crops are free from disease or insect damage and color on the red varieties has developed to almost 100 percent.

3. The market started out fairly strong averaging 50¢ to $1.00 per unit higher than last year. This premium dropped slightly toward the end of September, but still continues above last year's level.

4. The demand and movement of apples at the producer level started strong and has remained strong. Movement at the retail store level has been slow due probably to consumer reluctance to pay the extra premium on most consumer packages.

5. In previous years, there has usually been a wide range of prices on different types of packages. This year there was little difference. In the past week, cell pack McIntosh has been bringing a premium.

6. To date there has been only a limited volume put into storage. However, with prices sagging slightly and reports of a short crop existing, several growers have moved a limited volume into storage. Generally, the total will be much less than other years.

7. Generally, despite a short crop, many growers feel they will have a successful season.

Wisconsin Horticulture

VOL. XLVIII NOVEMBER, 1963 NUMBER 7

Only One Apple a Week

Did you know that the average American eats only one fresh apple per week? Not many of us are enjoying the pleasure, and the health-benefits too, of munching a fresh crisp apple—often.

We apple-producers are working with a most attractive food-product—beautiful and delicious—prepackaged by Nature—ready to eat without preparation —loved by children, yes, by almost everybody . . . and we're selling our people only one fresh apple a week!

Are we really working at apple-promotion? We're only scratching the surface. Sometimes, after a season of easy-selling, when demand equals supply, we get to thinking that we're doing a pretty good job of merchandising; but just think of the opportunities lying all around us. Huge sums are spent to advertise "snack foods," snacks that compete with apples, and millions are spent for these advertised foods . . . and this field is wide open to anyone with the determination to go after a share of this business.

With the kind of product we have to offer, we apple-producers can get our share of this food business. It will take strong co-operative effort. We have the two established organizations that are in the best position to continue to put forth this effort, the Wisconsin Apple Institute and the National Apple Institute, with the help of all of us.

Through the activities of these two groups much is being done and much more can be done to promote the apple-eating habit, which is really our primary purpose. Every grower ought to take an active part in the activities of the W. A. I. and make good use of the sales-helps it offers to its members, Our officers and directors are doing a mighty good job; they put a considerable amount of time and effort into making the organization work for all of us, but they are limited by the amount of support we give them. Help them out with your ideas, your suggestions. And if you haven't sent a check for membership this year, do it now.

The National Apple Institute, really a federation of regional and state groups such as our own, is doing a fine job of apple promotion. And we should realize how important it is that we have a strong organization such as N. A. I. representing us and looking after the interests of apple growers at the national level. These are days of "bigness"—big business, big labor, big government, whether or not we like it, and we growers must have a big voice to speak for us when necessary. This is where we need N. A. I Everyone of us growers needs both the W. A. I. and the N. A. I. and these organizations need every one of us. This includes you. If you are not a member, how about coming in, now?

—HAROLD RASMUSSEN

Editor's comment:

After reading the above a grower has to be hardhearted to refuse to promote his own cause.

Trees Do Talk, But One Must Listen With His Eyes

Under the topic "Dr. R. H. Roberts Says," this always interesting speaker stated that plants do not change but people change. We do things to a tree because we want it to do certain things which it does not always do.

There are no two McIntosh orchards alike in Wisconsin or the United States, and Canada can be included.

A mature tree is the result of what we do to it. A neighbor has a good fruit crop and we may try to follow his practice but miss. Pay attention to your own trees. With cherries in Wisconsin, this is particularly true since it is the coldest place cherries are grown commercially. Listen to your trees and not to just what people say.

Apple Varieties Affect Cider Quality

Frank McArdle, Pennsylvania State University, lists four factors usually responsible for low quality cider:

1. Poor quality apples as a raw product.
2. Insufficient care in selection and

CLASSIFICATION OF APPLE VARIETIES FOR CIDER

Group A Medium Acid	Group B Low Acid	Group C High Acid	Group D High Tannin	Group E Aromatic
Jonathan	Delicious	Duchess	Hyslop	Winter Banana
Stayman		Early Harvest	Red Astracan	McIntosh
Grimes	Rome Beauty	Red Astracan	Transcendent	Cortland
Golden Delicious		Transcendent	Dolgo	Delicious
McIntosh				
Cortland		Dolgo		
Winesap		Yellow Transparent		
Turley				
Winter Banana		Lodi		
York				
Northern Spy				
R. I. Greening				
N. W. Greening				
King David				
Wolf River				

Suggested Percentages of Juice for Blending
(Based on Preceding Grouping)

Group A Med. Acid	Group B Low Acid	Group C High Acid	Group D High Tannin	Group E Aromatic
75		*	*	25
50 - 25 **		*	*	25
50 - 25 - 25		*	*	
25	50	*	*	25
25 - 25	50	*	*	
50	25	*	*	25
75	25	*	*	
50	25 - 25	*	*	

* Should be added in small amounts if available.

** Indicating 50 percent of one variety of Group A, and 25 percent of another variety in Group A.

In an address before the Ohio State Horticultural Society, McArdle divided apple varieties into three groups and suggested that ⅓ by volume of each be used for a good blend.

Acid	Sweet	Aromatic
York	Red Delicious	Golden Delicious
Winesap	Rome	McIntosh
Duchess	Jonathan	
Maiden Blush	Grimes Golden	
Rhode Island Greening	Cortland	
Wealthy	Gano	

From: Hoosier Horticultural Newsletter.

WISCONSIN HORTICULTURE

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Henry Mahr, Editor, 10820 So. 27th St., Oak Creek, Wisconsin

blending the apple varieties.

3. Faulty manufacturing practices resulting from a lack of information about processing and preservation techniques.
4. Lack of sanitation in and near the processing plant.

If the cider is to have eye appeal, it should be bright amber color. Sediment floating in the cider or large accumulations at the bottom of the container will lower the quality. Sorbic acid at .05 to .10% by weight may be used as a preservative **but if used** it must be declared on the label.

To make cider the apples should be sorted and washed before pressing, the juice should be filtered and then blended for flavor and the resulting blend should be refrigerated at 32° to 36° F.

Most Indiana orchardists agree that the best cider is obtained by blending juices of several varieties. This has also been shown by a Purdue taste-test panel. Purdue taste-test panels also evaluated unblended juices and rated Grimes Golden highest and with Golden Delicious also rating very high but these were not as acceptable as blended cider. When single varieties are used they should be at the peak of their maturity. It has been also reported that teenagers prefer a sweet, low-acid cider, while most older persons prefer a more tart juice.

Purdue Agricultural Extension Mimeo HO-41 classifies apple varieties on the basis of acid content, astringency or aromatic content. A strict classification is not possible, however, because many varieties have a number of different flavor characteristics.

Chemical Weed Control in Strawberries

(By E. L. Denisen and R. L. Macha)

Horticulture Department
Iowa State University, Ames, Iowa

(Presented at Convention, Nov. 19)

I. 1962 yields of Cyclone strawberries with various herbicide treatments (each herbicide applied twice).

1961 Treatment (lbs. actual per A.)	1962 Production (qts/A., 4 reps.)
1. Eptam granular—6 lb.	8,760
2. Premerge granular—8 lb.	8,687
3. Zytron granular—11 lb.	12,105
4. Dacthal granular—6 lb.	9,832
5. Diphenamid granular	9,590
6. Falone granular—6 lb.	9,237
7. Neburon granular—5 lb.	9,350
8. Simizine granular—3 lb.	8,140
9. 2, 4-D granular—1½ lb.	9,960
10. Sesone spray—4 lb.	9,357
11. Check (weeded)	9,957

II. 1963 yields of Cyclone strawberries with various herbicide treatments (applied August 3, 1962). An application of Diphenamid was made to all plots on November 1, 1962. A severe freeze on May 23, 1963 greatly reduced yields.

1962 Treatment (lbs. actual per A.)	1963 Production (qts./A., 6 rep.)
1. Dacthal granular—6 lb.	2,894
2. Dacthal granular—10 lb.	2,639
3. Dacthal spray—6 lb.	2,338
4. Diphenamid granular—4 lb.	2,394
5. Diphenamid granular—6 lb.	1,770
6. Premerge granular—6 lb.	2,553
7. Zytron granular—10 lb.	2,073
8. Zytron granular—15 lb.	2,213
9. Falone granular—6 lb.	1,963
10. Sesone spray—4 lb.	2,355
11. Check (weeded)	1,857

As I Saw the 1963 Wisconsin Apple Season

Marlon L. Schwier

According to theoretical calculations, 1963 was to have been Wisconsin's record breaking year. This, according to past records, was the "up" year and there were predictions that Wisconsin might be in line for a commercial production of 1,800,000 to a 2,000,000 bushel crop. However, just about the time some of us so-called experts believe we have the situation figured out, we got reminded that Mother Nature plays a major role in the agricultural production. This certainly was the situation in the 1963 Wisconsin apple year.

First, we had an extremely cold winter and although we may not have proof, there are many who feel apple production for 1963 was definitely hurt. Secondly, a late May frost hurt many areas and certainly took its toll. A third factor was a very dry summer in many areas which definitely affected size of apples, reducing pack-out. Finally, a fourth factor which affected the marketable crop was a severe hail storm in several areas which eliminated all number one packs or better.

July 1 estimates by the USDA placed Wisconsin's production at levels similar to 1962 of 1,400,000 bushel. However, the International Apple Institute had Wisconsin pegged at a 1,000,000 bushel pack-out. As the season draws to a close, there are many who feel the 1,000,000 bushel prediction by the I. A. A. will be more realistic than the 1,400,000 estimate.

Variety-wise this was a Dudley, McIntosh, Cortland and Jonathan year along with some volume of other minor varieties. The Wealthy crop was particularly short in all areas primarily due to the frost and the Delicious, in addition to being short, was reduced further when the three largest producers suffered severe hail losses.

On the price side, the market opened very strong. According to the Wisconsin Department of Agriculture Apple Information Report, this was the highest opening in the past seven years. Opening Wealthy prices were at $3.50 - 3.60 on all units which was about 50c over other high prices of previous years. A few lots of early varieties such as Wellingtons and Beacons were sold at prices on the Chicago market over the $9.00 figure.

The market held firm until about mid-September and then started to sag. By the end of September the prices were at levels comparable to some of the other low-price years. An extremely warm fall seems to be the reason for the sagging market. Movement at the grower's packing houses or stands was exceptionally good but movement at the consumer level in the retail stores was almost at a standstill. The large wholesale buyers bought in very limited volume and as supplies at the orchard accumulated, the prices dropped. There were, however, numerous growers who received some top prices and are reporting a very successful year. Basically, these growers pack premium packs, exert a little extra sales effort with personal attention, and have developed a market which is giving them that extra price.

Also on the credit side of the Wisconsin apple situation was the extremely favorable processing price this year. Processing apples were in strong demand and at prices considerably above previous years. Juice apples commanded prices up to as high as $1.50 per hundred while sauce and slicing apples brought prices up to as high as $2.75 - 3.00 per hundred.

Nationally, the apple picture was also very spotty. Total production will again be at levels of last year—about 120 million bushels. However, the East and Midwest are down but the largest crop on record was produced in the Far West this year. Washington has one of the largest Delicious crops in its history. Pack-out is reported to be

5,000 cars more than their predicted volume. Totally, they expect to ship in excess of 35,000 cars this year. Washington Delicious moved into the Minneapolis and Milwaukee markets in late September which normally does not occur at this time.

Generally, optimism for a successful season is still high for many apple growers over the nation. Reports indicate other competing fruits are down in volume thus giving apples a prominent position on the store counters throughout the coming winter.

Fruit Show Winners at Convention

The Apple Display at the 1963 Convention was unusually attractive due to the extra color observed on most Wisconsin apples this year. It is unfortunate that this quality of apple cannot be shown at the Wisconsin State Fair. Winners in the various classes are as follows:

Grand Champion—Golden Delicious—Walter Clemens.

Reserve Champion—Red Delicious — Emil Beyer.

McIntosh — Emil Beyer, 1st; Mrs. Reuben Koch, 2nd; H. J. Hasslinger, 3rd.

Cortland — Emil Beyer, 1st; L. T. Zinn, 2nd; Mrs. Reuben Koch, 3rd.

Red Delicious — Emil Beyer, 1st; Sam Schwartz, 2nd; H. J. Hasslinger, 3rd.

Golden Delicious — Walter Clemens, 1st; Emil Beyer, 2nd; Mrs. Reuben Koch, 3rd.

Jonathan — Walter H. Clemens, 1st; Sam Schwartz, 2nd; Emil Beyer, 3rd.

N. W. Greening — Emil Beyer, 1st; L. T. Zinn, 2nd; Walter H. Clemens, 3rd.

Connell Red — Connell Sun Ridge Orchards, 1st; Grandview Orchards, 2nd.

Mixed Group — Emil Beyer, 1st; Barnes Red Ribbon Orchard, 2nd; Mrs. Reuben Koch, 3rd.

Mixed Group — Emil Beyer, 1st; Sam Schwartz, 2nd; Armin H. Barthel, 3rd.

Mixed Group — Emil Beyer, 1st; Walter Clemens, 2nd; Mrs. Reuben Koch, 3rd.

Prize Foods

The following won prizes at the Auxiliary Meeting of the Wisconsin State Horticultural Society, November 19, 1963:

Mrs. Armin Barthel — Applesauce-Refrigerator Cookies, Apple Cake, Dark Apple Cake, Apple Tarts.

Mrs. John D. Barnes — Unbaked Apple Cookies.

Mrs. Arthur Bassett — Apple Yums, Apple Mallow Tort.

Mrs. Emil Beyer — Apple Crumb Cake.

Mrs. W. Clemens — Special K-Apple Cookie, Applesauce Muffins.

Mrs. Roy Dingle — Apple Slices.

Mrs. Reuben Koch — Apple Pie Bars.

Mrs. Otto Koepsell — Fudge Cake, Apple Cake.

Mrs. Wm. J. Louis — Spicey Apple Bar Cookies.

Mrs. S. Mathisen—Applesauce Fudge Yummies.

Mrs. A. J. Meyer — Apple Layer Cake.

Mrs. Frederic Meyer — Applesauce Refrigerator Cookies.

Mrs. Harold Rasmussen — Cherry Nut Applesauce Cake.

Mrs. Willard O. Wagner — Apple Dream Squares.

These excellent desserts, supplemented by excellent cider from the Waldo Orchards were enjoyed by the convention audience following the afternoon program.

Labor Law Changes Told at Convention

Mr. D. N. Ajer, Director, State Wage and hour Division, Wisconsin Industrial Commission, presented the new changes in labor laws in Wisconsin. Those

growers who must hire help should write to: Wage-Hour, Woman & Child Labor Division, Industrial Commission of Wisconsin, Madison, and ask for these publications: "Summary of Wisconsin Wage and Hour Regulations" and "Employment of Minors in Wisconsin." These publications have been prepared in attractive, concise form and should be in employer's reference file.

Mouse Control in Orchards

Berkeley R. Peterson, District Agent Fish & Wildlife Service, St. Paul, Minn.

The control of orchard mice is a continuing problem and control methods should be considered a regular orchard practice. Heavy damage from mice occurred in many Wisconsin orchards last winter. The mouse population appears to be equally as serious, if not more so, this winter. In view of this general increase in the mouse population, effective control methods are a must if mouse damage is to be kept to a minimum.

Mechanical and Cultural Aids

The protective wire guards are generally restricted for use on young trees. The placement of hardware cloth cylinders having three or four wires to the inch placed around the base of newly planted trees is usually effective in protecting the tree against mouse injury for 5 to 7 years after planting. However, do not rely on wire guards entirely as it is not unusual for mice to either climb over or tunnel beneath the guard and girdle the tree. The hardware cloth should be 18 inches high and embedded in the ground at least two inches or on top of the tree's root crown. Aluminum wrap, tar paper or other similar material wrapped around the tree also offers protection against mice and rabbits, during the winter months.

The removal of ground vegetation limits the living area for mice and usually reduces mouse damage. The most important cultural practice is the clearing of a 3-foot radius around the base of the tree. This can be accomplished by scalping with mechanical equipment, by hand, or killing the vegetation with chemical weed killers. Mowing, discing or sod-chopping helps limit mice but care should be used not to leave heavy cover directly around the tree base. Where mice or red-bellied meadow mice (prairie volves) are involved, the destruction of surface cover may have little influence on their underground activities. Snow cover for long periods can also give the mice the shelter they need. Cultural practices, although having definite limitations, should be considered whenever the mouse population is high.

Field mice can be destroyed by placing poisoned bait in mouse trails by hand, by hand broadcasting it or by using machines to either broadcast or place bait in mouse trails. Hand baiting in trails continues to be the most effective treatment, but it is slow and laborious. Therefore, until better mechanical methods are developed we are stressing the HAND - BROADCAST METHOD with zinc phosphide corn - oat bait. The hand-broadcast method is fast. A man can bait an orchard about as fast as he can walk up and down the tree rows. To treat, forcibly throw a small handful of bait into matted grass within the drip area of a tree. Walk up a tree row and treat one side, then back on the other side. This means two bait spots per tree. Bait sifts through the grass and mice readily find it. In throwing the bait, try to confine the spread to a spot about 1½ ft. wide. When averaging two bait spots per tree, the rate of application runs about 8 to 10 pounds per acre, except in young plantings.

If bait is applied by hand in trails, about three pounds per acre is needed. **We are recommending a bait consisting of equal parts of whole oat groats and No. 4 size cracked corn treated with two per cent zinc phosphide, using Lecithin as a spreader.** The best time for

baiting is during October and early November. When signs indicate that mice are not numerous, thorough coverage of that orchard may not be necessary. Treat the adjacent areas along with the portions of the orchard in which trouble usually occurs. During heavy persistent snow cover, a few mice can cause serious damage. Thus it may be necessary to rebait in mid-winter using strychnine grain. Place bait in snow tunnels, air holes and near fresh bark damage.

Ground Sprays

The U. S. Fish and Wildlife Service does not recommend the use of endrin as a ground spray for field mouse control because the hazards are not fully known. Three parts per billion will kill fish and at the concentrations used for mouse control instances of wildlife and livestock losses have occurred. When endrin is used the area should be posted with warning signs. Do not use in areas where run-off will contaminate farm ponds, streams or other water supplies. Livestock should be excluded and should not be fed crops or hay cut from the treated orchard. Recommendations on the label must be strictly followed.

IMPORTANT: Before using endrin contact the Wisconsin Conservation Department as a permit is required.

Organization for Better Marketing

Mr. Robert E. Heffernan, in charge of fruit and vegetable facility planning in the Marketing Facilities Research Division, U. S. Department of Agriculture, Washington, D. C. spoke on the needs and advantages of a centralized area storage and packinghouse for apples. He pointed out first the importance of being able to withhold supplies for the market at harvest time, to avoid overloads, and to make orderly distribution over an extended period. This was said to be essential where a sizable increase in production is in prospect.

Five advantages were cited for a centralized storage of adequate capacity:

1. It enables growers to handle fruit at proper stages of maturity, thereby removing the pressure to start picking too early because of limited packing capacity or ability to market in the harvest season.

2. Peak quality and picking-time freshness of the fruit is better maintained if placed under refrigeration as quickly as would be possible in a storage capable of handling bulk boxes or palletized field crates.

3. Fruit is less susceptible to bruising and other damage when packed out of cold storage than when handled directly from the orchard.

4. It is a safer practice to store apples as loose fruit and pack out to buyers' specifications at time of sale rather than run the risk of putting up a finished pack weeks in advance and having it stored in some distant terminal.

5. Availability of adequate storage enhances the bargaining power and strengthens the market position of producers at harvest time.

Modern efficient packing facilities should be installed, according to Mr. Heffernan, in conjunction with the centralized storage. These would supplement, rather than supplant, producers' own packing operations, and were held to have these benefits:

1. At harvest time, certain orders could be packed out from fruit cooled down at the storage, while the producer's own packing line is handling other orders.

2. The centralized facilities would be in an all-weather packing house, enabling growers to fill orders at any time throughout the winter without risk to the fruit or discomfort to the packing crew.

3. Fruit could be brought from storage, packed in anticipation of sale, and returned to storage pending shipment; hardly feasible if the producer's own packing facilities must be used.

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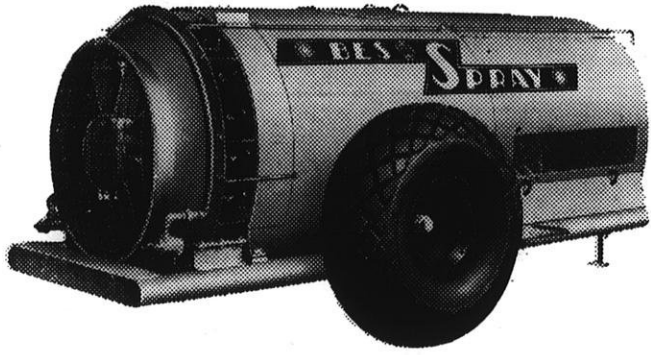

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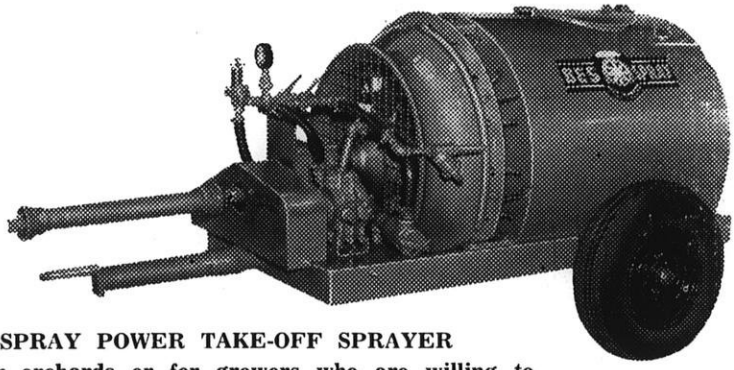

BES-SPRAY POWER TAKE-OFF SPRAYER

For smaller orchards or for growers who are willing to spend more time spraying than would be necessary with the model No. 580.

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4. The centralized packing equipment would have all the refinements needed to furnish any type of pack a buyer might specify.

5. As producers' existing packing equipment wears out, or becomes obsolete, they can elect to rely exclusively upon the central facilities rather than make substantial replacement investments.

A corporate form of growers' organization — cooperative or otherwise — could best own and operate the facilities. If agreement to market all graded and packed fruit through the organization under a common label could not be obtained, the facilties could be used under an established schedule of fees and charges for services rendered. Each producer would then retain his trade identity and have his fruit packed under his own label simply by furnishing the packaging material. He could specify the grade standard and even supervise the sorting if he wants to do so. He would then be responsible for his own sales.

Mr. Heffernan concluded by saying that such a limited form of organization would be well worth considering in any area where it appears unlikely that growers can be brought together on a total committment basis.

Banta's Michigan Visit

Eldon S. Banta, Secretary, writes in the Ohio State Horticultural Society Newsletter:

Your secretary visited some Michigan fruit growers and other folks interested in the fruit business from October 8 to 13. This was an eye-opener since I had not toured this sister state since 1956. The greatest changes or developments that I observed were these:

1. Large numbers of new apple plantings in the area north of Grand Rapids and in southern Michigan counties.

2. Rapid increase in the volume of apples growing in controlled atmosphere storage.

3. Almost complete change-over to bulk boxes (14 or 15 bu.) for storing.

4. Nearly complete mechanization of handling from picking to the sorting table, and then into storage; the use of bulk boxes has made this a necessity.

5. Increased number of corporate groups of growers organized to make more efficient and profitable these phases of the fruit growing business; handling, storage and selling.

6. Several sizable plantings of the newer spur-type apple varieties and varieties on semi-dwarfing rootstocks, primarily Malling VII but some on Malling Merton 106.

Here are some noteworthy comments

I picked up along the way: Dr. Harry Bell of MSU said Diphenamid is the best herbicide he has under trial on strawberries, but has not been approved for use. Dr. Paul Larsen, also of MSU (our speaker last February), showed me an experimental peach planting under chemical weed control and variable nitrogen treatments. Trees around which simazine was used and also received the highest rate of nitrogen came through last winter in fine shape and made good growth this year. Check trees and trees receiving only low rate of nitrogen treatment were mostly dead or badly winter injured. Bill Bramen, Belding Fruit Sales, was treating apples for scald control with DPA by running the apples through a hydracooler containing the treating liquid. The apples were in bulk boxes.

Walter Toenjes of Greenville (formerly of the Graham Station) said he still believes mulching to be one of the most beneficial of orchard practices; also that fall applications of nitrogen are best (in Michigan) of course. Bob Anderson of Covert, after five years experience with phygon for peach canker control, showed me old and young trees with no new cankers. He mixes 1 lb. phygon in 100 gallons of water; sprays in the fall after leaves are off and again in the spring while trees are dormant.

Fruit Research in Progress At Sturgeon Bay Reported At Convention

In a later edition it will be possible to give more details of the fine report given by Superintendent Dr. Frank Gilbert on this subject. He did distribute several sheets of mimeographed material, and of particular interest was the report on CHEMICAL weed control in orchards. This information can be obtained from Dr. Gilbert at the experiment station at Sturgeon Bay or through your county agricultural agent.

Dr. Gilbert showed several excellent slide photographs of his weed control demonstrations and urged that sprayers be calibrated to know how much material is being applied. In spraying a fruit tree for insects or disease control a surplus will just run off the leaves or fruit, but with weed control a surplus can cause serious damage.

Weed control chemicals are applied at so much per acre. Your editor wants to emphasize this point. Would you drive your tractor against a stone wall just to see what would happen? While nobody would think of such a ridiculous thing, there are those who use weed control chemicals just about the same way.

Calibration is easily done and a circular is available from your county agent's office. Since the summer orchard tour will be held in Door County, without question one stop will be at the Experiment Station where these things can be seen. Of particular interest was Dr. Gilbert's report on the apple variety trials. If you would like a copy of this mimeographed report, contact Dr. Gilbert.

Christmas Tree Bulletin

The Wisconsin Conservation Department and Department of Resource Development have just announced the publication of a "Special Christmas Tree Edition" of the Wisconsin Forest Products Bulletin. The Special Edition contains the listings of more than 300 Christmas tree producers. The bulletin also includes listing of specialty items, such as cones, boughs, roping, wreaths, etc. News items in the bulletin emphasizes tree quality, tree grading, transportation of Christmas trees and other items of importance. A copy of the Special Christmas Tree Edition may be obtained by writing to the Wisconsin Conservation Department, Nevin Hatchery, Madison, Wisconsin 53711.

Wisconsin Apple Markets Information and Promotion Efforts

W. T. Reese of the Wis. Dept. of Agriculture gave this report at the Wisconsin Horticultural Society Convention November 20, 1963.

A. OBSERVATIONS OF THE 1963 SEASON:

1. Production

(a) Nationally

—Forecast (July) was for a 120 million bushel crop, about 5% under 1962.

—Lighter production in most areas except in the Far West. Washington expecting a large crop.

As of November 1

—Production is reported to have reached 120 million bushel or as forecast.

—East and Midwest were down but Washington considerably above normal.

—Variety production—up on Delicious because of Washington. Down on McIntosh.

(b) Wisconsin

—July 1—USDA predictions, 1,400,000. However, International Apple Institute predicted only 1,000,000 bushel.

—As of November 1 — no official release out as yet. However, all indications are production will be closer to the 1,000,000 bushel mark than the 1,400,000.

Certainly the fresh marketable crop will be down as hail in several areas along with exceptionally dry weather in other areas curtailed development of good apples.

Wealthy crop was exceptionally small. Late spring frost, especially in the Gays Mills area, took most of the crop. Also, very short in the Door County area.

Harvesting opened 10 days to two weeks ahead of normal harvesting periods. Many of the Dudley apples were gone before August 25 and the limited Wealthy crop was in volume movement at that time.

2. Price Picture (Wisconsin)

—The market opened very strong. The **highest** in the seven-year period of the Apple Market Information Program. Opening Wealthy prices were $3.50-360/unit —(10/4's — bushel baskets).

—A few lots of early varieties such as Beacons and Wellingtons were sold at prices **on the Chicago market** over the $9.00 figure. Unbelievable but true.

—Market held good until mid-September then started to sag.

—By the end of September the prices were at levels comparable to most of the other years.

—Prices in the western side of the state and Minnesota averaged again at least 50¢ per unit higher.

3. General

—A wide range of prices continue to flourish in Wisconsin. Reasons:

(a) Quality of packs. The better packers are getting the top prices. **A major item.**

(b) Sales efforts — some growers are just better sellers.

(c) Size of sales. Small lot sales 150-200 bushel generally receive more money than the carlot volume of 500-600 bushel.

(d) Market outlets. Some markets just bring more money.

—Despite a short crop, lower prices this year resulted because of:

(a) **Most important** — unseasonably warm fall. Movement at the retail store level was exceptionally slow making wholesale movements limited.

(b) Apples matured at a rapid rate and quality became a factor.

(c) Lack of adequate refrigerated storages (**a perennial problem**) continues to plague our industry.

—On the credit side:

(a) Movement at growers' packing houses or roadside stands was one of the most spirited in many

a year with prices holding strong.

(b) Demand for processing supplies reached an all-time high and prices reacted accordingly. Sizable quantities even moved into Michigan which is certainly a rarity.

(c) Despite a poor production year, many growers are reporting a successful season.

B. APPLE MARKET INFORMATION PROGRAM:

—Completed our 7th year of this program with the last 4 under a coordinated program with Minnesota growers.

—It is our honest opinion it is continuing to gain in stature and importance as substantiated by:

(a) More grower confidence, revealing more confidential information so we can more accurately analyze the sitation.

(b) The grower making many of his decisions on the basis of these reports. We have authentic reports of growers consumating deals based on this market report or information supplied to them.

(c) **Most important**—buyers are following these reports. Buyers have personally told me they use this report to get a picture of production, harvesting, supplies, and prices.

(d) Most pleasing of all are the fine letters we have received complimenting the program.

(e) Finally—express our appreciation for the cooperation we have received from everyone from grower to buyer. Without this cooperation, we couldn't begin to give them this service.

C. PROMOTION EFFORTS:

1. Philosophy of Promotion

—A necessary evil of modern merchandising.

2. Our Efforts

—Flyer of September Apple Time.

—Spot announcements.

—Point-of-Sale:

—All National Apple Week Material. Mailed out 20,000 pieces. 1,600 kits.

—Necessity of having material featuring Wisconsin. How can we encourage impulse buying of Wisconsin apples if we don't have banners featuring Wisconsin? Stress value of poster "Wisconsin Apples."

3. Industry Efforts:

—Exhibits—compliment industry for State Fair Exhibit — particularly Henry Mahr and his committee for excellent job. Also exhibit at Wisconsin Teachers Convention. Results of handout flyer on teaching aids already heavy. Request for the information listed coming in volume.

—Retailers Promotion Contest — a good way to generate retailer interest in buying Wisconsin apples. Could be pushed harder by the apple grower as only 10 entries this year.

More active support both financially and personally are badly needed.

Many items used in this promotion work were shown the audience.

The Mahrs Have It

At the just concluded annual meeting of the Wisconsin State Horticultural Society, Henry Mahr, 10820 So. 27th St., Oak Creek, Wisconsin, was elected Executive Secretary - Treasurer. This means that he will also edit the Wisconsin Horticulture magazine. Henry was raised on a combination fruit, grain, dairy farm where he still lives. The dairy cattle are gone, but Henry produces lawn sod, certified grain seed and with the help of his wife and children sells raspberries from about one-fourth acre of well-kept raspberry canes. All help with the apple orchard, part of which is in dwarf trees. Violet, Henry's attractive and hard working wife was chosen as the Auxiliary's Secretary-Treasurer.

This talented couple are both accom-

plished musicians and with the boundless energy both have, things should really hum for the Society.

At the annual meeting of the Wisconsin Apple Institute, President George Premo appointed Henry Mahr to serve that organization in a like capacity until the organization meeting of the board of directors, scheduled for January 9th at Madison. Beginning December 1st, communications for both organizations should be directed to the Mahrs.

Our Product and the Consumer

Miss Doris Staidl, Consumer Marketing Agent at Green Bay, told of many interesting things about the buying habits of the consumer, which really is the wife of the family in most cases.

Among many other things in a year, the average consumer uses 25,000 inches of spaghetti and 191 bottles of pop, but only 90 lbs. of fresh fruit. Part of this is probably due to the consumer not knowing when various fruits are in season. The housewife wants foods that are ready to use. She is willing to pay more for the best quality. Attractive packages are necessary. Fruits should not only be named properly but the consumer should be told how to use each. Do not put poor quality on the market. It only lowers price for the better quality product. In the supermarkets there is a choice of many foods so competition is keen for the consumer dollar.

People can be encouraged to come to your orchard to buy, but you should sell only good quality at a fair price so that prices in the stores are not necessarily disturbed.

Your efforts must be geared to the ultimate consumer.

Thanks — Advertisers

The financial support of the people who have carried advertising in the 1963 issues of Wisconsin Horticulture has made possible the printing in attractive form of the present "Wisconsin Horticulture." Our sincere thanks to them with the hope that the members of the Wisconsin State Horticultural Society and the Wisconsin Apple Institute have shown their appreciation by purchasing the advertised products.

Sec'y Sid Mathisen Says:

Good Health and much strength is your retiring Secretary's wish for you. I resigned as your Secretary-Treasurer to do some research for men who want to benefit mankind. Why are people in some areas much healthier than those in another? It appears to be the soil. What the soil permanently loses goes to the oceans. Perhaps this needs to be brought back to the land. The material in the oceans and seas appears to be quite uniform. A group of men have called this material, minus the water —seasolids. It has at least 44 different constituents in varying quantities. Preliminary tests have shown the seasolids when put on the soil will produce not only larger yields but the livestock fed these crops also do better.

I am helping to run some tests this winter and spring on tomatoes grown both in soil and hydroponically. I had never seen a large hydroponic installation and now I am working with the largest one in the United States at Le High Acres, Florida. There are 11 acres—each acre having its own well and tank and consists of 62 beds made of concrete 100 ft. by 3 ft, and 8 in. deep. The tomato roots grow in the 6 to 8 inches of gravel through which the fertilized water is fed to the plants twice a day on the average. After the solution is applied, it is allowed to drain into a sump and pumped back in the holding tank. Tests are made frequently to keep sufficient plant foods available.

One of the eleven acres will have the sea solids test—as will one acre of a 20 acre area of soil grown tomatoes.

It is pleasant work and I enjoy grow-

ing things whether it is apples or some other healthful food.

I wanted to visit many of the Wisconsin apple growers this summer, but a limited budget prevented.

* * * *

What Wisconsin needs is ten times as many Wisconsin Apple Institute members—ten times as many Horticultural Society members, and much higher dues so that the apple growers of Wisconsin can continually and persistently tell the consumer of the health values of apples and apple juice. You CAN help people to help themselves—BUT —YOU have to make up your mind to do it—then ACT!! IT'S UP TO YOU!!

* * * *

The October 27 issue of the Racine Journal-Times of Racine, Wisconsin carried a full page of information about apples. The red and green colors helped to make the page more attractive. It carried 16 quotations from various authors with the following of special interest to the Fruit and Dairy business of Wisconsin:

"But I, when I undress me
Each night upon my knees,
Will ask the Lord to bless me
With apple pie and cheese."
—EUGENE FIELD
"Apple Pie and Cheese"

It is assumed that apple growers in that vicinity showed their appreciation to this organization.

* * * *

FREE COLORING BOOK AND RECIPE BOOK

A unique new 16 page apple coloring book for children and a book with taste tempting apple recipes for homemakers, prepared by the American Cyanamid Company may be obtained free by writing to the National Apple Institute, Suite 410, Headquarters Building, 2000 P Street, N. W., Washington, D. C., 20036.

Protect Apple Quality

Dr. A. L. Ryall, Chief, Horticultural Branch U. S. D. A., in discussing protecting apple quality after harvest, said that his information was not particularly for Wisconsin apples but that his apple experience was quite general. The word "quality" means nothing. Growers must set standards of quality. Dr. Ryall used a fine set of color slides, one of which showed a machine developed by the U. S. D. A. which looks through the apple but does not injure it. With this light apples can be separated on the basis of internal chlorophyl. Separated in this way there is more uniformity in taste.

He also showed a pressure tester called a "mechanical thumb" which determines maturity. In discussing storaging of apples, a photograph was shown indicating the results of the controlled atmosphere storage with varying amounts of carbon dioxide and nitrogen. It was found that in general when stored at 31 degrees best results were obtained with no carbon dioxide and 3% oxygen.

For Golden Delicious, film liners are used to prevent water loss. Over 5% water loss causes an unsightly shriveling. With Golden Delicious, if the carbon dioxide is too high there will be a brown appearance inside; therefore, using a completely tight covering is not good.

Dr. Ryall answered numerous questions from the audience.

Strawberry Variety and Selection Trials

(By W. L. Denisen and R. L. Macha)
Horticulture Department
Iowa State University, Ames, Iowa

Presented at Convention, Nov. 19

I. 1962 yields at Ames were as follows (replications):

-Variety	Qts./A	Size (gm) 2nd pkg.
1. Midway ---------- mid-season, promising	15,653	13.3
2. Tenn. Beauty --- mid-season, size drops	11,949	7.8
3. Armore ----------	11,834	10.2

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late, large, recommended

4. Sparkle ---------- 11,660 9.2
late this year, recommended
5. Cyclone ---------- 11,369 12.2
early, large, recommended
6. 13—13 ---------- 10,934 11.1
mid-season, leaf spot
7. Surecrop --------- 10,861 10.2
mid-season, looks good
8. Jumbo ---------- 10,164 8.6
mid-season, size drops
9. Erie ---------- 10,077 9.0
10. Trumpeter ------ 9,990 9.3
mid-season, looks good
11. 137-5208 ---------- 9,264 8.1
Early, firm
12. Robinson --------- 8,610 11.6
late, large, recommended
13. 106-5208 ---------- 8,465 9.3
late, firm
14. Redglow --------- 8,175 10.9
mid-season, variable
15. Catskill ---------- 8,160 10.8
mid-season, attractive
16. Earlidawn ------ 7,870 7.1
early, firm, tart
17. 40-5202 ---------- 7,594 7.3
early, discard
18. 56-5202 ---------- 7,478 8.7
mid-season, raised seeds
19. 2-37 ---------- 6,752 11.6
early, plants crowded
20. Orange Queen -- 6,447 8.2
mid-season, poor color, soft
21. Midland --------- 4,574 7.7
early, poor plant maker
22. Earliness ------- 4,066 6.2
early, plants numerous
23. Dunlap ---------- 3,978 5.8
mid-season, plants crowded
24. Pocahontas· ----- 3,688 6.8
mid-season, lacks vigor

II. The 1963 yields were so greatly decreased by a severe freeze on May 23 that yields are considered unreliable.

Everbearing Strawberry Trials:

I. The 1962 everbearing strawberry yields at Council Bluffs supplied by C. C. Doll, Superintendent, Council Bluffs Experimental Farm, are as follows for berries in the hill system which were planted in the spring of 1962:

	Qts./A
Ogallala	4,900
Superfection	4,528
20th Century	3,784
Lee Teague	3,730
Ozark Beauty	3,176
Red Rich	2,813
Chief Bemidji	2,087
Honey Lump	1,425
Geneva	1,334

II. The 1963 everbearing strawberry yields at Ames are as follows for plants established in spring, 1963:

Geneva	7,095
Ogallala	6,551
Ozark Beauty	6,524
Brunes	4,382
Superfection	4,068
Lee Teague	3,622
Streamliner	3,594
Red Rich	0

(Apparently June-bearing strain.)

Wisconsin Horticulture

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A New Look At Fruit Tree Nutrition

By A. L. KENWORTHY
Department of Horticulture, MSU
East Lansing, Michigan

A new look at fruit tree nutrition? Just what do we mean? Has there been some new fertilizers produced? Have they found other nutrient shortages that may affect fruit production?

No, there is nothing really new in fertilizers other than the way they are pelletted, granulated or bagged. Also, there are no new nutrient shortages that you need to be concerned about. A "new look" is often the "old look" changed just a bit. As in ladies' fashions, perhaps it is just a slight raise in the hemline—but what a difference it makes. Today, I would like to suggest that we take a "new look" at our fertilizer programs by first taking a "good look" at what we are doing. In doing this, there are several questions we need to answer for ourselves.

First, I would like each of you to ask yourselves if you have honestly done all that could be done to eliminate any fertilizer problem in your orchard? Can we honestly say that we are doing the best we can or, instead, do you place more confidence in someone else's judgment than you do your own judgment? Are we hollering "wolf" when we can easily shoot the "critter" ourselves?

Suppose we take time and set down what we want to accomplish with our fertilizer programs. Perhaps our aims could be summarized by saying we want maximum yield, maximum quality, annual bearing and maximum economy.

To some extent these objectives are not physiologically compatible. For example, in order to obtain maximum yield we may have to sacrifice something in quaility. Conversely, we may have to sacrifice something in yield in order to get maximum quality. As for annual bearing, we may have to reduce yield in many cases in order to have annual bearing. Actually, what we mean is that maximum is not the most but is the best possible for best economy. In accomplishing this we should not be "penny wise but pound foolish."

First, let us consider annual bearing. How does this fit into our "new look?" We usually think of "on" and "off" years. An "on" year usually results in smaller fruit and greater yields. However, how often do we think of why there is an "off" and "on" year? What happens to the carbohydrate level of the tree during these variations in yield? What happens to terminal growth? Flower bud formation? Fruit set Nitrogen level? How would pruning affect this? There are many factors involved and we should think of them all. But, how many times do we do things on the "on" year that should have been done on the "off" year?

One basic principle that we should keep in mind in regard to tree performance is the fact that flower buds for this year's crop were set last July. If we wanted to influence flower buds this year, our treatments should have had their effect by last July. From here on we can do little about the flower buds set last year. About all we can do is to regulate the crop through pruning, thinning and regulating growth.

Another basic principle to keep in mind is the flowering habits of fruit trees. Terminal growth of peach and cherry is directly related to flowering because the flower buds are born laterally on last year's shoot and spur

growth. Apple and pear spurs bear fruit in a terminal position. Thus a spur on apple and pear can only bear fruit every other year and a spur on cherry can bear fruit every year. These factors influence the amount of growth that each tree should make. Commercial fertilizers can only play a part in this. Of the commercial fertilizer, nitrogen plays the most important role. Of course, we must prevent other nutrient shortages.

What about fruit fertilizers? In general, our major problems are still the the control of nitrogen, potassium and magnesium.

Nitrogen—Research has demonstrated that there is no essential difference between the various sources of nitrogen. Also, the advantage of fall versus spring applications occur in factors other than nitrogen availability in the spring. Of course, this is eliminating late spring applications. We can readily use any source of nitrogen from sodium nitrate to anhydrous ammonia in either fall or spring on apples, peach, pear and cherry. Occasionally we may get some injury from the use of urea on our cherry. This research will be continued. The previous comments summarize the observations for the first three years.

—From **Eastern Fruit Grower**

Government Contract for Pesticides Study

WASHINGTON, D. C. — A $650,000 government contract has been awarded to a Virginia firm to study pesticides.

Getting the contract was Bionetics Research Laboratories, Inc., of Falls Church, for a year's study on whether bug-killers and other pesticides cause human cancer.

The Virginia firm is expected to carry on a continuing research program under contract to the Department of Health, Education and Welfare.

Bionetics during the year covered by the contract will study the cancer causing potential of about 40 pesticides.

—**Packer**

Winner of 1963 Apple Retailers Promotion Contest

"Quality" but not "quantity" might be the best terms to describe this year's participation in the Wisconsin Apple Institute Retailer's Promotion Contest. A total of only 10 entries was received but according to the Wisconsin Department of Agriculture, whose staff members selected the winners, all were of exceptionally high quality and showed evidence of good planning and execution.

The Grand Prize Winner and recipient of a $100 cash award was Gilbert Kindschy of Krambo Store No. 27 at the Valley Fair Shopping Center in Appleton, Wisconsin. Mr. Kindschy prepared a very fine display of a variety of apples and framed a picture of the State of Wisconsin which announced Wisconsin Apple Time and at the bottom he printed in large letters the little ditty:

Have 'n apple — crisp 'n firm;
Chomp right in—th're ain't no worm;
Vitamins, minerals 'n sugar, too;
WISCONSIN grows 'em—just for YOU
Eat 'em every day!

He should be highly commended on his efforts. We trust it helped him to sell Wisconsin apples.

Other winners included the following:

Ivan F. Kupsch, Park and Shop West, Sheboygan, Wis.

Robert J. Elger, Kroger Food Store No. 39, Hales Corners, Wis.

Anthony Sanfilippo, Kroger Store No. 57, So. Milwaukee, Wis.

Perry S. Dibble, Kroger — M-113, Berlin, Wis.

Nick Michels, Kroger No. 35, Fond du Lac, Wis.

Richard J. Kaufert, Sr., Doering Super Valu No. 610, Appleton, Wis.

Mrs. Betty C. Hoover, Fox's Super

WISCONSIN HORTICULTURE

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Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

Henry Mahr, Editor, 10820 So. 27th St., Oak Creek, Wisconsin

Valu No. 32, Beloit, Wis.
Wayne A. Marston, Kroger Co. M-160, Beloit, Wis.
James Cirillo, Kroger No. 9, Waukesha, Wis.

Letter from the Editor's Desk:

Fellow apple growers, the apple industry of which you and I are a part, has reached a crossroad. We must decide whether we wish to organize for strength financially and otherwise, fully and effectively or to continue on an individual and fragmented basis.

To do an effective job, each grower and member is asked to keep up his dues of $5.00 a year and $1.00 per acre of bearing orchard. Any extra financial help that could be used for promotion would be appreciated.

The success of any endeavor whether it be local, state or national depends upon the willingness of all its grower members, large or small to support its program from which all ultimately gain.

Racine - Kenosha Meeting Jan. 28

Racine and Kenosha county fruit growers will meet January 28 at 10:00 a. m. at Rochester, and all are invited to be on hand.

Milwaukee - Waukesha Growers Meet Jan. 29

The joint annual meeting of Milwaukee and Waukesha county fruit growers association will be held January 29 at 10:00 a. m. in the Waukesha county court house.

Sheboygan Growers To Meet Jan. 30

The Sheboygan county fruit growers will meet Jan. 30 at 10 a. m. in the Menomonee Falls Municipal building.

Wisconsin State Horticultural Society Officers 1964

At the convention in November, Walter Clemens, Mequon, was elected President; Sid Telfer, Jr., Vice President, Ellison Bay; Sec.-Treas., Henry Mahr, Oak Creek. New Directors elected for three years were Frederic Meyer, Waldo; Armin Barthel, Mequon; James Erickson, Baileys Harbor.

The other members of the board are Jerry Flynn, Milton Junction; Howard Erickson, Egg Harbor; Carroll Krippner, Fort Atkinson; Gerald Fleming, Gays Mills; Jack Wallhaven, Sturgeon Bay; Willard Wagner, Cleveland; Mrs. Arthur Bassett, R. 4, Baraboo; Norbert Schachtner, Sturgeon Bay.

Officers Elected for Wisconsin Apple Institute 1964

At the Board of Directors Meeting on January 9th, at the Cuba Club, in Madison, officers elected were: George Premo, Richland Center, President; Don Rawlings, R. 1, Richmond, Ill., Vice President; Henry Mahr, Oak Creek, Sec.-Treas. (temporary).

New Directors elected at the November Convention were Howard Erickson, Egg Harbor; Walt Frish, New Holstein; Gerald Hipp, Janesville; Jim Robertson, Sturgeon Bay.

IAA Co-operating in Dental Health Week

Dental Health Week, February 2-8, 1964, is an excellent opportunity for the entire apple industry to engage in an outstanding public service, reports the International Apple Association, National Children's Dental Health Week, sponsored by the American Dental Association, attracts the attention of millions of parents and children. Dentists by the thousands, dental hygiene teachers, school officials and school teachers welcome the help and participation by the apple industry. Their friendly, co-operative spirit is amazing and encouraging, says IAA, and continues:

"This co-operation between the dental profession and the apple industry has developed in part through ten years of support for National Children's Dental Health Week by the IAA distributing a Dental Health poster, approved each year by the American Dental Association. The Dental Association again this year has approved a new poster which the IAA will issue in support of the 1964 Dental Health Week. The poster was ready for shipment about January 1, but an illustrated leaflet and order card was in the mail by mid-December. This 11 by 14 inch poster is offered to dentists, dental clinics, school dental hygienists, school authorities, etc., on the basis of one to a classroom.

"We urge the industry to contact the local dental societies in each city and/or county now. It is time to start preparations. These dental societies have excellent publicity programs in the schools, in the press, over the air. Plan with them a joint program. Invite the retailer to be a part of it through his advertising and display of fresh fruits and vegetables which are regarded as dental detergents—apples, oranges, celery, carrots.

"Ever since school started last fall, we have been receivng literally hundreds of letters and post cards for our apple-dental posters. Here is a suggestion just received from a school teacher in Washington State:

"A crusade is a vigorous movement to accomplish something for the good of all. Apples are Nature's best tooth brush. We propose to start a Dental Health Crusade in the grade schools throughout the United States.

"As soon as school takes up after the noon intermission each child that enters the contest eats an apple to clean his teeth—each child brings his own apple. If he does this every school day for a set time (say a month) he gets a prize. This will work very well with the school program, for teachers usually read to their children right after the bell rings for about fifteen minutes. This would be 'Apple Eating Time'.

"What could this mean to the apple industry?—In 1956, there were 33,000,000 children in the grade schools of the nation. If each one ate an apple a day, they would consume 264,000 boxes in one day or 330 carloads a day. This would create an unlimited demand!

—From Packer

Making Vinegar

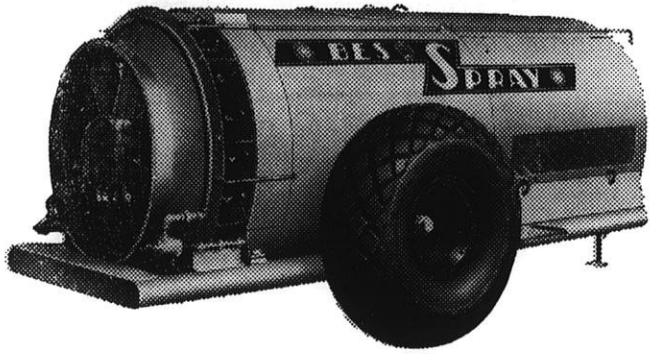
Dr. F. J. McArdle, Penn, State University, indicates there are a number of ways to make vinegar but suggests the following method as most easily accomplished on the farm:

1. Prepare apple cider in the usual way and place it in a clean wood keg or barrel. No special type is required.

2. Close the barrel air-tight except for a small vent hole through the top bung. This arrangement will allow the yeasts present in the cider to ferment the sugars to alcohol. The vent hole is necessary to allow carbon dioxide to escape. The first fermentation takes place best at temperatures near 65° F. so the barrel should be kept in a relatively warm place. After three to four weeks the alcohol fermentation should be finished.

IT'S BESLER

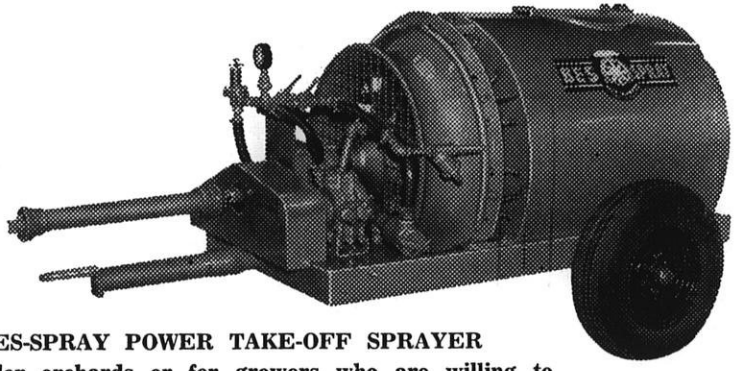
SELECT THE SPRAYER THAT'S RIGHT FOR YOUR PARTICULAR CONDITIONS



BES-SPRAY 580

A complete unit for growers who want the very best. Finest Bes-Spray ever built—result of sixteen years' development while spraying hundreds of thousands of acres.

HIGHEST "K" FACTOR of any comparable sprayer. High "K" factor (the kinetic energy of the sprayer) gives enormous working power. In Besler sprayers the spray is already moving at a high speed when picked up by the moving air. Eliminates much of the power waste of other sprayers in which the air alone must bring about much more acceleration of the spray droplets.



BES-SPRAY POWER TAKE-OFF SPRAYER

For smaller orchards or for growers who are willing to spend more time spraying than would be necessary with the model No. 580.

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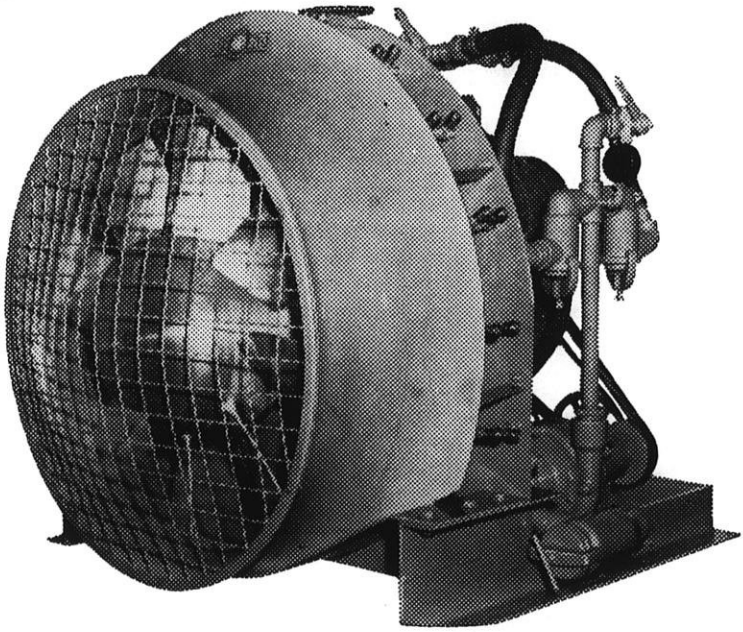
BES-SPRAY FOR '64

Power must be fitted to your conditions or it is wasted!



BES-SPRAY POWER PACKAGE

Complete air carrier sprayers at almost half price. Simply add your own tank and trailer (takes about eight man-hours). Includes valves, strainers, etc.

BES-SPRAY ZOOM

NEW DESIGN with blower in center. Compact model whose simpler design means less maintenance and less cost; sharply reduces suction of dirt and leaves into engine and fan; provides better balance.

Sold and Distributed by

Wisconsin Orchard Supply Company

"Bill" Aeppler **Telephone 567-6635**

704 Concord Road — Oconomowoc, Wis.

3. At that time remove the bung and cover the bung hole with gauze or other material to keep insects out. Vinegar bacteria which are normally present in cider will then ferment the alcohol to acetic acid, which is the acid that gives vinegar its characteristic flavor. This fermentation requires plenty of air so the barrel should be shaken frequently to aerate the contents. About four weeks will be required for the acetic acid fermentation if the temperature is held around 65° F.

4. After the second fermentation the vinegar should be drawn off, filtered through cloth, and stored in clean glass containers. Good vinegar keeps quite well if stored in a cool place.

(From: Hoosier Horticulture Newsletter)

Is There a Need for Continuous Advertising?

(From Seneca County Extension Newsletter, New York)

Well, Should . . .

MINISTERS — preach only one sermon or so a year? (People are against sin anyway, so why harp on it?)

POLICEMEN—stop patrolling streets and highways? (People know the laws and will obey them anyway.)

TEACHERS — eliminate review lessons? (The children will never forget what they have been taught.)

TRAFFIC LIGHTS — be turned off to save electricity? (Everybody knows where the danger spots are and will be cautious without extra warning.)

Or Should . . .

A lesson be taken from the Notre Dame Cathedral, which, although it has been offering the same services at the same location for more than six centuries, still ring the bell every day to let people know it is there?

Fruit Russet on Golden Delicious Apples

D. H. Palmiter, Plant Pathologist, New York Agricultural Experiment Station, reports that fruit russet on Golden Delicious apples may be caused by many factors. Apparently some russet is inherited with the individual trees. One tree may have a high percentage of its fruit severely russeted while other trees surrounding it produce smooth fruit. Adverse weather conditions around or following the bloom period often are factors in the cause of fruit russet. These include frost, or near frost temperatures, and extended periods of rain or high humidity. This explains why fruits that hang down in the grass cover often have more russet than those grown with better air circulation where they can dry off quickly following rain or spray applications. There is some evidence to indicate that spraying immediately following frost periods or under slow drying conditions may increase the amount of fruit russet.

Palmiter states that there is no question about some fungicides increasing fruit russet on sensitive apple varieties. Fungicides in this group include products that contain mercury, dodine, dichlone, glyodin, ferbam and sulfur. Fruit russet is apt to be increased if the above materials are used in combination with phosphate insecticides. Captan and thiram fungicides have been proven the safest of many tested on Golden Delicious since 1954.

Some spray materials or combinations of materials tend to reduce the amount of russet that might otherwise occur. Palmiter's field experiments in 1957 and 1959 indicate this. Trees sprayed with combinations of captan or thiram with DDT and lead arsenate produced fruit with much less russet than that on unsprayed trees. When the lead arsenate was omitted from the combinations as in 1957 fruit from the

sprayed and unsprayed trees showed equal amounts of fruit russet. This seems to indicate some corrective action due to the presence of the effect of fruit russet and was included in most of the spray experiments for the control of curculio. The use of captan or thiram with Guthion showed about the same amount of russet as unsprayed trees. However, when these fungicides were used with Diazinon or Sevin, fruit russet was increased over that of unsprayed trees.

In 1957 and 1958 experiments, the use of lead arsenate was started at petal fall and continued through the cover applications. In 1959 lead arsenate was not used until the second cover. Since use of lead arsenate improved fruit finish in all three years the need for the arsenical in the early sprays was in doubt.

However, this question was answered in an experiment in 1961, where lead arsenate was started at petal fall in some plots and delayed until the third cover in other plots. The results clearly show that under the wet conditions of 1961 the use of lead arsenate started at petal fall produced better fruit (12% - 14% russet) that where the arsenical was delayed until the third cover (34% - 35% russet).

From: Hoosier Horticulture Newsletter.

Margin – Mark-up

The terms "margin" and "mark-up" are being used in discussions of prices of apples to retail stores. There does not appear to be a uniform understanding of the two terms.

A 25% margin is approximately equal to a 33% mark-up.

A 33% margin is approximately equal to a 50% mark-up.

A 40% margin is approximately equal to a 66% mark-up.

A 50% margin is approximately equal to a 100% mark-up.

The word "approximate" is used here because of the current practice of rounding the percentages of odd numbers to whole cents.

"Margin" is used generally in the analysis of retail businesses because the total sales for a period is the one solid figure available. All costs of goods sold, labor, overhead and profit must come out of the total sales amount. In this instance, "margin" is used to represent the percentage of the retail price retained by the store.

"Mark-up" is used as a method of arriving at a retail price when costs are more significant than price appeal. "Mark-up" is based upon the cost of goods at wholesale. Nowadays price appeal is considered important in retail pricing and is the basis of the 39, 49 and 59 cent prices. "Mark-up" is therefore seldom used.

The following examples will illustrate the difference between the two. A 50-cent retail price is used in these examples, rather than the prevailing 49¢ price merely to simplify the arithmetic. Fractions are rounded to the nearest cent.

a) A store margin of 25% on a 50¢ item at retail is 13¢—price to grower 37¢. A mark-up of 33% on this wholesale price of 37¢ would result in a retail price of 49¢.

b) A store margin of 33% on a 50¢ item is 17¢—price to grower 33¢. A mark-up of 50% on this wholesale price would result in a retail price of 50¢.

c) A store margin of 40% on a 50¢ item is 20¢—price to grower 30¢. A mark-up of 66% on this wholesale price would result in a retail price of 50¢.

d) A store margin of 50% on a 50¢ item is 25¢—price to grower 25¢. A mark-up of 100% on this wholesale price would result in a retail price of 50¢.

Fred E. Cole,
University of Mass.
Hoosier Horticultural Newsletter.

WINNERS

The following were winners in Fruit Disease and Insect Identification Exercise at the Wisconsin State Horticultural Society Meeting Nov. 19-20, which was presented by John Libby and Earl Wade, Extension Plant Pathologists.

Tied for 1st place (perfect score in identification and 4 wrong in checking type of organism causing disease):

Mrs. Reuben Koch, West Bend, Wisconsin (grower)
Richard E. Goff, Route 1, Waupaca (Rep. American Cyanamid Co.)

2nd place (perfect score in identifcation, 5 wrong in organism causing disease):

William T. Plumb, Manitowoc (Plumb Orchard and Garden Supply)

3rd place (perfect score in identification, 8 wrong in organism causing disease):

Phil Bassett, Ski-Hi Orchard, Baraboo.

Tied for 4th place (2 wrong in identification, perfect score in organism causing disease):

Jim Law, Sturgeon Bay (Rep. California Spray-Chemical Corp.)
Lee Smith, Horticulture Extension Agent, Kenosha.

Tied for 5th place (2 wrong in idenification, 2 wrong in organism causing disease):

Roy Dingle, Route 3, Richland Center grower)
Bill Albright, 404 Coleman, Chippewa Falls (Rep. California Spray Chemical Corp.)

Home Apple Storage

Apples will ripen about four times as fast at 50 degrees as at 32 degrees. They'll become overripe rapidly at 70 degrees or above.

Hold temperatures as close to 32 degrees as possible for apples in storage. But protect the apples against freezing (28 to 30 degrees).

Perforated polyethylene bags and box liners will keep apples from shriveling. Don't seal or tie the polyethylene bag, or you will encourage decay.

Winter variety apples or those that were harvested late in the season are the ones that store the best. The winter varieties would include the Red and Golden Delicious, the North Western Greening, and the Jonathan. The fall varieties like McIntosh, Cortland, Snow, and Wealthy store better than summer apples but not as well as the winter varieties.

Apples stored in the home should be kept away from onions, potatoes, or other foods that give off odors. And it's best to keep the humidity around 80 per cent and the temperature just above freezing. The suggested high humidity and low temperature are hard to reach in today's homes.

It is a good idea to put the apples in storage as soon as possible after harvest. Store only good fruit, and handle the apples like eggs to avoid bruising and rough handling.

Prof. George Klingbeil
Horticulture Bldg. -U. of Wis.
Madison 6, Wisconsin

Wisconsin Horticulture

VOL. XLVIII FEBRUARY, 1964 NUMBER 9

GEO. PREMO RE-ELECTED PRESIDENT OF THE WIS. APPLE INSTITUTE

The Board of Directors of the Wisconsin Apple Institute re-elected George Premo as their President in a meeting held January 9th in Madison. Don Rawlins was elected Vice President, and Henry Mahr agreed to serve temporarily as Secretary-Treasurer.

A major discussion at the meeting was the relationship between the State Horticultural Society and the Wisconsin Apple Institute and what should be the future of these two organizations. It was the general feeling of all present that each organization is contributing favorably in some manner to the fruit industry of Wisconsin. Yet, they are creating divided interests.

Horticultural Society President, Walter Clemens, reviewed briefly some of the principles and objectives of the Society, but expressed the belief there was need for a re-evaluation of the program. He indicated he would call a meeting of the Executive Board to discuss this program.

Professor O. B. Combs, Chairman of the University of Wisconsin College of Agriculture Horticulture Department, also expressed the opinion that times and conditions have changed which may warrant the formation of only one active fruit organization in the state. He strongly urged the two groups to work together to resolve some of these problems.

At the conclusion of the discussion, it was decided to call a joint meeting of the Board of Directors of the Apple Institute and the Executive Board of the Horticultural Society some time in March to explore possibilities and potentials of uniting the Apple Institute and the Wisconsin Horticultural Society.

The board heard other reports concerning World's Fair participation, retail promotion contest, National Apple Institute activities, summer tour, and annual convention plans.

The following were in attendance at the meeting:

Apple Institute Board Members — George Premo, Richland Center; James Kegel, Gays Mills; Don Rawlins, Twin Lakes; James Frostman, Belgium; Willard Nieman, Cedarburg; Walter Frish, New Holstein; Howard Erickson, Egg Harbor; and Henry Mahr, Oak Creek.

Also attending were Walter Clemens, Mequon, President of the Wisconsin Horticultural Society; Prof. O. B. Combs and Prof. George Klingbeil of the Univesity of Wisconsin College of Agriculture; A. R. Kurtz, Willard Reese, and Marlon Schwier of the Wisconsin Department of Agriculture.

Wisconsin Strawberry Growers Meetings

Three regional educational meetings are scheduled for Wisconsin commercial strawberry growers.

March 3 — Waukesha — VFW Hall.
March 5 — Green Bay — YMCA.
March 10 — Alma Center — Grace Lutheran Church.

Subjects to be discussed are insects, disease and weed control, new developments in marketing, plant improvement, and wage and hour regulations.

Meetings will be held at 10 a. m.

All commercial strawberry growers are invited and encouraged to attend.

WISCONSIN HORTICULTURE

Published monthly excepting July and December by the Wisconsin State Horticultural Society and the Wisconsin Apple Institute.

Membership $2 per year of which $1 covers subscription to Wisconsin Horticulture.

Henry Mahr, Editor, 10820 So. 27th St., Oak Creek, Wisconsin

WHY GAMBLE?

"Even if you're on the track, you'll get run over, if you just sit there."

We cannot gamble with soil fertility when growing costs are high. Growing apples requires high fertility for best production.

When it costs $115.82 for spray material per acre; 42.5 hours of labor per acre; $1,018 per acre to grow a young orchard to bearing age; $23.63 for tractor power per acre; $72.45 for harvest 245 bushels of apples per acre; along with $199.05 for grading, sorting, storing and containers; it doesn't pay to gamble with fertility. (These figures taken from "What Are My Costs of Growing, Harvesting and Storing Apples?" by J. T. Porter, R. C. Suter and G. W. Hussey, Purdue University, Lafayette, Indiana.)

When your insurance or fertilizer cost only runs about 2% of all cost, it should not be found lacking.

In Bayfield County we find many orchards on soils with low pH. Apples will and should be grown on soil with a pH of 6.5. Make sure you use dolometic lime when liming your orchard. Lime should be incorporated into the soil for best results.

Your soil tests for growing apples should show a minimum of 100 to 120 lbs. of phosphorous per acre, and 200 to 300 lbs. of potash per acre. When your soil tests show at least the minimum you should add maintenance fertilizer. The maintenance fertilizer should be governed by growth of trees, color of leaves, variety of apples, type of soil and so forth. Make sure your fertility is high and that **none** of the needed elements are short.

Until you find your trees do better on other amounts of fertilizer, I would suggest you use the following amounts per mature tree:

Nitrogen—1 lb. of N or 3 lbs. of ammonium nitrate.

Phosphorous—.2 to .3 lb. of P_2O_5 or 3 to 4 lbs of 0-10-30.

Potash—1 to 1.2 lbs of K2 or 3 to 4 lbs. of 0-10-30.

The fertilizer can be applied in any form in the late fall (before soil freezes) or early spring in Bayfield. Young trees can receive about 1/10 the above amounts for each year of growth. At ten years, they will be receiving the full treatment.

Be sure to test your apple orchard soils for trace elements once every six years. This should be done particularly on light soils. It doesn't pay to gamble with the things that can give you **good high production,** which is needed to reduce your cost per bushel of apples.

The Mathisens Report From Florida

Sid and Jo Mathisen reported that the hydroponic tomatoes are looking right well in Florida. They think those with sea solids along with the fertilizer have a better flavor than those without the sea solids. The tomatoes are being picked and trucked to Miami where they are packed and sold for fancy prices on Miami's and New York's Gold Coast. They warded off frost on January 14th by using oil burners and sprinkling all night long; temperature dropped to 26. Sid is working so much he does not have time to fish.

PRUNING APPLE TREES

G. C. Klingbeil, Ext. Specialist
Dept. of Horticulture, University of Wis.

Apples are pruned for the purpose of training to forms that will result in least breakage and for later convenience of pruning, spraying, and picking. Pruning will, also, influence the size of fruit and regulate the bearing of a tree. No two trees or orchards are alike; therefore, pruning requirements will be different.

Pruning is dwarfing in effect. Young unpruned trees make more total growth than pruned trees; therefore, it is beneficial to train young trees to their desired form as soon as possible, then reduce it until corrective pruning becomes necessary.

Pruning increases vigor of a tree. Probable reasons for increased vigor are: (1) Remaining limbs receive more of what is supplied to the shoots from food reserves in the tree. (2) Remaining limbs get more mineral nutrients at least until the root-top balance is restored. (3) Remaining limbs get more water until root-top balance is restored.

Young Apple Trees

Standard young apple trees should be pruned so that the lowest limb is about 30 inches from ground level on the side toward the prevailing wind. Select other wide-angled scaffold limbs around the main trunk. Two limbs can be opposite one another but limbs on the same side of the leader should be a minimum of 18 inches apart. Five to nine scaffold limbs are desirable.

Bearing Apple Trees

Bearing apple trees will vary in pruning requirements. Some trees must be reduced in height; others must have branches cut back and thinned out. The primary purpose in pruning is to improve the producing capacity of the tree and the quality of fruit produced.

Pruning can be simplified by following a definite pattern or procedure. These are method suggestions to follow when pruning a bearing apple tree.

Step I. Cut off water sprouts or suckers from the trunk and lower scaffold limbs. Water sprouts are usually unbranched, whiplike, upright growing branches. It may be desirable to allow an occasional, moderately vigorous sucker to remain as a fill in or replacement. Cut close.

Step II. Remove all dead, broken, or diseased limbs and branches.

Step III. Remove limbs that cross over or rub on other limbs. Remove the weakest or poorest limb. Limbs may not rub when dormant, but the weight of fruit and foliage may cause them to do so.

Step IV. Remove limbs that grow toward the center of the tree. Such limbs usually originate from the scaffold limbs and can most easily be detected by standing on the ground near the center of the tree and looking upward.

Step V. If more thinning of the tree is desired, it is suggested to remove the thin, weaker branches. These are usually found around the lower and outer portions of the tree beneath thicker or more dense growth.

Step VI. If the tree is too high for convenient spraying and picking, more drastic steps may be necessary. To lower a tree, select one or two of the large limbs that are growing the highest. These usually originate near the center of the tree. Remove the entire limb at its place of origin. This may mean removing a limb six or more inches in diameter. When such pruning is done, detailed pruning should be greatly reduced. Do not remove just the top branches as many road and power crews do on shade and street trees.

NOTES

1. Make all cuts clean, smooth and close; they heal much faster.

2. Pruning wounds over two or three inches in diameter can be covered with any of several wound dressing com-

CONNELL RED

"A really choice apple"

One of the very finest new varieties, excellent flavor, outstanding color, early production, good storage life, and proven hardiness. A prominent Midwest orchardist writes "CONNELL RED stores with Winesap and has the flavor and texture to rival Delicious."

Listed below are some of the WISCONSIN nurseries and garden centers now handling the Connell Red:

Ajak Gardens
Hudson

Arnie's Garden Center
1643 Harding Avenue
Eau Claire

Blue Ribbon Garden Center
513 N. Main Avenue
New Richmond

Erickson Super Market
River Falls

Gartman's Gardens
4611 Lakeshore Drive
Fond du Lac

Hall Nursery
Elmood

Mueller Nursery
1600 Mansfield
Chippewa Falls

Erickson Super Market
Hudson

May's Greenhouse
1320 Jeffers Road
Eau Claire

Breck's Nursery
711 W. Knapp Street
Rice Lake

Fancher's Nursery
Sturtevant

Greaves Nursery
6170 N. Port Washington Road
Milwaukee

West Hill Garden Center
Wausau

Patland Farm & Nursery
Route 4, Box 27
Marshfield

J. W. Jung Nursery, Randolph (Mail Order)

Nurseries in other states which carry the CONNELL RED are:

Bunting Nursery, Selbyville, Delaware
Ferris Nursery, Hampton, Iowa
Farmer's Seed & Nursery, Faribault, Minnesota
Gurney's Nursery, Yankton, South Dakota
Swedberg Nursery, Battle Lake, Minnesota

FOR SALE: John Bean used and new sprayers.

Connell's Sunridge Orchards, Inc.

Box 89 **Menomonie, Wisconsin**

pounds. Do not use grease, tar, or petroleum solvent mixtures.

3. Heavy pruning should be done the winter or spring before a large crop is expected.

4. Pruning is done best during the dormant season or that time when the tree is without leaves.

A New Look at Fruit Tree Nutrition

By A. L. Kenworthy
Department of Horticulture, MSU.
East Lansing, Michigan

Potassium — We have not been able to demonstrate any differences between muriate of potash, sulfate of potash and sulfate of potash magnesia. The only difference we can find is in the cost. However, research has shown that it is better to apply 200 to 300 pounds of pure potash fertilizer than to dabble around with the small quantities applied as complete fertilizers.

Magnesium — Dolomitic lime is still the most economical means of supplying magnesium. However, fineness of material is important. Some of the coarser materials being used are non-effective. Epsom salts sprays should be combined with lime applications and may be needed for three or more years. Spray recommendations are for dilute sprays but epsom salts can be concentrated to any level.

How about the other elements? Here there is no general problem and these will be handled as specific cases are found. Our information suggests that the margin of safety for minor elements is getting less each year. Thus we may expect more cases of deficiencies than we have had during past years. However, there is no present need for alarm.

Now, just what are we (you) doing about the fertilizer programs? Are we seriously trying to determine the nutrient needed and are we applying only those that are needed? How many of us order the fertilizer with too little thought of need other than what was used last year? If we are to realize maximum income for our products, we must exercise all possible measures of economy but not be "penny wise but pound foolish."

"Penny wise but pound foolish?" For pennies, growers who use complete fertilizers without need are spending pounds. Let us look at what complete fertilizers are doing for us. Leaf analyses clearly show that complete fertilizers are not improving the phosphorus and potassium status of the tree. The records do show that where complete fertilizers are used there is a reduction in nitrogen. Does this mean that the cost of complete fertilizers is such that we shave off a few pounds, save a few pennies, and lose in nitrogen without gaining in phosphorus and potassium? The records indicate this.

This failure of complete fertilizers to improve tree nutrition for phosphorus and potassium has been known for many years. Research has shown us that it is best to solve a problem when we have one. If it is potassium, solve it by making a worthwhile application rather than dabble around. The same physiology applies to phosphorus.

How about phosphorus? The present estimate is that ½ to 1% may need phosphorus. This means 5 of every 1000 locations need phosphorus. What should we do about it? First don't dream up your problem; know what it is. If it is phosphorus, apply 700 to 1000 pounds of concentrated superphosphate. Such an application is equal to about 3000 pounds of complete fertilizer. Can you afford 3000 pounds of complete fertilizer to supply phosphorus when needed?

Our evidence still indicates that leaf analyses is the most reliable diagnostic tool to determine fertilizer needs for fruit trees. This program has been available for 12 years and will be available for many years to come. The program is available for all tree fruits and blueberries and for potassium on

grapes. Each year we have had a wide array of leaf samples submitted for analysis. This year there were samples representing at least 30 fruit varieties and involved all kinds of fruit trees. Have you taken advantage of this? There are few areas outside of Michigan where you could obtain such information.

I am sure that all of you can recall the statement—"Michigan has long been and will continue to be an important fruit state." Perhaps hearing it again recalls some fond memories. When we consider the large number of fruit growers in Michigan, the wives, sons and daughters and the men in industry, extension and research workers who are all working for Michigan's fruit industry, how can we fail? We can only fail if we fail to analyze our own problem. Michigan fruit growers have the knowledge, experience and resources to do this and they will not fail.

Wisconsin Apple Institute Pres. George Premo Makes Committee Appointments

The following have been appointed on the various Apple Institute Committees:

Dues and Membership—Don Rawlins, Chairman; Albert TenEyck; Sid Telfer, Jr.; and Randolph Smith.

Promotion — William Meyer, Chairman; James Robertson; Walter Frish; and Howard Erickson.

Newsletter — Walter Clemens, Chairman; Armin Bartel; Willard Nieman; and James Frostman.

Exhibits — Inc. State Fair — Henry Mahr, Chairman; Leroy Meyer, and Elroy Honadel.

Market Information — James Kegel, Chairman; Bigelow Lourie; and Willard Nieman.

Grading and Marketing Clinics — Don Grun, Chairman; and Ralph Young.

Budget — James Kegel, Chairman; Gerald Hipp; and Albert TenEyck.

Legislative — Gilbert Hipke. Chairman; Walter Frish; and Henry Mahr.

National Apple Institute—Henry Mahr.

President Premo requested all committees to have reports ready by the next board meeting scheduled for late March or early April.

Joint Meeting of W. A. I. And Horticultural Society

There will be a joint meeting of the Wisconsin Apple Institute board of directors of The Wisconsin State Horticultural society on Friday, April 3, at Uphoff's Restaurant, Lake Delton, Wis. at 10:00 a. m. Mark this date down for this will be an important meeting to decide the possible merger of the two organizations. Other very important problems will be discussed also.

Wisconsin Horticulture Advertising Rate Card

CIRCULATION — 1200 to fruit growers, including all 71 County Extension offices.

ISSUED MONTHLY, except July and December. 12 to 16 pages, 6 x 9 inch page size, body type 8½ pt. Aurora.

ADVERTISING RATES — Back outside cover $30, front or back inside covers $25 each; other whole page $20, half page $11, one-fourth page $7, 1 col. 2 inches $3, two col. one inch $3.

For photographs or drawings add engraving charge of $1.50 for 1 col. 3" or $3 for 2 col. 3", larger cuts in proportion. We can use your cuts or mats if right size, without extra cost.

10% off for same ad in every one of 10 issues (year).

2% off for cash with advertising copy.

Copy should be received by 5th of month of issue.

Mail to **WISCONSIN HORTICULTURE**
Henry Mahr, 10820 South 27th Street
Hiway 41 & Milw. - Racine Co. Line
Phone SO 1-0374, Oak Creek, Wis.

How Does P. Y. O. Lend Itself To Your Operation?

Don Rawlins, Twin Lakes

A question that many of you have asked yourself, is should I try P. Y. O. I'm sure that many of you could successfully change your apple operation to a pick it yourself type of merchandising unit. Let me warn you, there are many problems and headaches as some of the more experienced growers who have tried P. Y. O. will tell you. There are also many rewards.

P. Y. O. is not new and it is not new to this area. Thompson orchards in eastern Kenosha county have used a pick it yourself program on cherries and strawberries, and the Vincent family near Genoa City, have successfully harvested many a strawberry in this manner. We started the P. Y. O. because of labor problems and have used a form of P. Y. O. for about ten years. There was not real promotion until 1961. We now base our entire operation on this type selling.

The first thing to look for in a P. Y. O. operation is customers. Proximity to a good market (a large population) is a necessity. The type of customer that will pick his own apples is generally as follows: rich, poor, young, old, large families, small families, city slickers, and farmers, single people and married couples. In our opinion what "pick your own customers" like most about picking their own apples is an opportunity to get first quality fruit at a little lower cost and have an outing in the bargain. They also like to get a chance to see a little of what goes on behind the scenes at a real farm. This P. Y. O. is a little more intimate and gives the customer a feeling of ownership and a little more responsibility in bringing customers to his orchard and showing friends his place where they can get some really good apples. Some do it the first time for a lark, and find that they enjoyed picking their own so much they keep coming back. There are probably others that P. Y. O. doesn't appeal to at all.

Let's assume that you have apples to sell, and you want to try the P. Y. O. method. Unless your trees are small enough so that all the fruit may be picked from the ground, you will need ladders, and lots of them. For example, if you plan on about twenty cars a day during the week (we measure by cars) about ten ladders will be needed, and if several varieties are ripe at the same time more ladders would be nice.

Moving ladders can be quite a problem and some people tend to come at the same time of day, thus requiring several ladders at the same time. We don't try to keep the people in any certain tree or row, rather let them go and they will find a tree of their liking and do their own "scouting" for apples. This system gives the customer a little more freedom, we think, a feeling of confidence that he has found the best apples in the orchard. We figure that a weeks ladder mover's salary will buy a couple of ten foot ladders.

It goes without saying the cleaner and better the fruit the easier the operation will be. More future customers, less complaints and more profit.

Liability insurance is a necessity. As I said previously, we let our customers drive into the orchard and go to the tree they intend to pick from. You will need coverage on people falling out of trees, off ladders, and any human accident. Car radio antennas get broken, and just about every thing you can think of happening, will. Cost of insurance coverage varies from company to company and from a straight premium to a percentage of gross sales.

Let's assume that we have ripe apples, insurance and customers breaking down the gate to get in. A good system of checking people in and out is needed. We have found that a prepared form has solved most of our problems. This form has our name, a place for the customer's name, instructions, storage hints, and the varieties and prices of each. We hope that the customer fills out the form and leaves us the carbon for our mailing list, and adds his total prices correctly and has his money ready at the gate.

There are a few things that I feel we should mention at this point. The fol-

lowing are points that will vary with the size of the operation and the nearness of a large market.

Traffic control is a problem. It is necessary to keep the cars moving freely and as rapidly as possible. We use baling twine to guide people to where they can find the best trees and to the varieties that are ripe and to steer them past the already picked part of the orchard. We have found that one or two people on weekdays and several on week-ends are necessary to assist in traffic and also with ladders, baskets and little things that pop up.

The following signs are recommended: "one way" — "out" — "in" — "open trunk" — Picture of properly filled basket — "we look in spare tire wells"—"turn in picking baskets here."

You will need apples already picked for those who just don't like to pick their own. Apple cider to sample is good, and plenty to take home. Also I feel that any plus items that you can merchandise and do a good job are essential. We have a "pick your own" pumpkin patch, a lot of customers like home grown melons, squash, and Indian corn is popular. We sell recipe booklets, apple slicers, a lot of empty peck baskets, and we hope good will. All these add up on the cash register to plus dollars.

If you haven't done much advertising in the past, the P. Y. O. operation will require a lot more. We use direct mail, newspapers, road-signs, and radio. I don't know how much is good or how much is the limit for a good operation. I have yet to find anyone who can say "Use this percentage of your gross sales" for advertising. We probably spend more than we should, and probably not so wisely, but we still need a lot more customers and we will keep struggling until we get them. We have found that going to county fairs with a

booth, and giving away apples to get names for a mailing list works o. k. too.

As much as we hate to make cider and as hard as it is to have a really good product, this has had a large effect on our repeat customers. And the free cider at the packing shed attracts a lot of people.

To summarize: Have good fruit, plenty of ladders, good help, good insurance, a good source of potential customers; Tell them about your apples, have plus items for sale and, it won't happen over night, but you are in business.

Keep in mind that 7200 babies are born each day, and that makes two and one half million each year. By 1970 about 18 million new customers will be buying about 26 pounds of apples each, in addition to the present consumption. So you can see this is quite an increase in potential sales. Remember also that in the Chicago area there are twice as many people as in the entire state of Wisconsin. We are in an excellent position to promote and sell as hard as we can, move as many apples retail as possible, and give our good customers as fine a product as we know we are capable of producing.

Harold Schubert Passes Away January 16, 1964

Harold J. Schubert, owner and president of the Kickapoo Orchards at Gays Mills, Wisconsin, passed away January 16, 1964 at the age of 67 years. Mr. Schubert became ill during the apple marketing season. After completing sales of his 1963 crop he entered the University of Wisconsin Hospital where he underwent major surgery. He returned home but later re-entered the hospital where he passed away on January 16.

Mr. Schubert was an active supporter of the Wisconsin Horticultural Society and the Wisconsin Apple Institute and served as president of the Apple Institute for two terms during the years

1951 through 1953.

He is survived by his wife and one daughter. He made his home in Madison, Wisconsin at 2414 Kendall Ave.

How COLOR of Red Delicious Apples Affects Their Sales

A study of customer buying response to the color of Red Delicious apples showed that retail sales of highly colored apples (from 75 to 100 percent good red color) were significantly greater than sales of partly red apples (50 to 75 per cent good red color).

Equal proportions of the highly colored and partly red apples were combined and offered to store customers in a single display having 50 to 100 percent good red color. Sales from this combination display were significantly less than sales of highly colored apples but greater than those of partly red ones when each color was displayed separately. All test fruit was offered in bulk displays, and prices were the same for the test apples in each of the three color ranges offered.

In seven of the nine retail food stores where tests were conducted, highly colored apples outsold those from the combination display. In all stores the highly colored apples outsold partly red apples. During 4 of the 6 weeks of the experiment, total sales of highly colored apples were larger than sales from combination displays and in all weeks higher than sales of partly red ones.

Sales from the combination display were higher than from displays of partly red apples in eight of the nine test stores and during all 6 weeks of the test period.

Sales of test apples had no significant effect on total sales of other apples.

These findings are from a study conducted during a 6-week period in late 1961 in nine retail food supermarkets in Atlanta, Ga.

This study was carried out in cooperation and with the support of the National Apple Institute. Colonial Stores made available retail stores in Atlanta, Ga., as laboratories for the experimental work. The research was under the general direction of Robert E. Frye and William S. Hoofnagle.

Meetings at Washington, D. C.

Sec'y-Treas. Henry Mahr will be in Washington, D. C. February 17 - 20 for a series of apple meetings. On the 17th will be a Secretary-Manager session. On the 18th and 19th will be the meeting of the Board of Trustees of the National Apple Institute. On the 20th will be a meeting of the Grades and Standards Committee. Many things will be discussed about the future of the apple industry.

Prof. O. B. Combs
Horticulture Bldg.
Madison 6, Wisconsin

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Wisconsin Horticulture

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National Apple Institute Grades & Standards Meeting

International Inn, Washington, D. C.

February 20, 1964

The meeting was opened at 8:30 a. m. by Chairman James F. Laise, Virginia, who immediately asked for a round-robin discussion by each member present concerning the past year's experience.

All those reporting an increased use of U. S. grades and generally no serious problems. The northwest noted that there was very little additional use of the new grades.

The main problems encountered were found to be more packing requirements and some color problem, particularly with the other characteristics as it involves the various new strains.

Under packing requirements Section 51:311, it was pretty generally agreed that the ¾" space between the apple and the top of the container was not realistic. It was suggested that this be taken out of the first paragraph and placed in the No. 1 footnote titled "fairly well filled." It was further suggested that the term free-space might be used to allow use of an inverted tray or pad as a precautionary measure for bruising.

Characteristic color was discussed very thoroughly and it was agreed by the department to increase their additional program in the inspection services and to work very hard on a universal standard for color. The apple growers present indicated their desire to help in this program and stand ready to attend meetings or schools of this nature.

The method of measuring the individual apples found in Section 51:307 (C) was discussed and upon motion of L. A. Putnam, seconded by John Hackenbracht, it was agreed to return to the old definition. The department approved of this action.

A discussion ensued relative to water core and making condition a factor of grade. The group felt that it was not possible to go further with these points at the present time and that the original description might be changed to read firm-ripe rather than over-ripe. This would be a start in the direction of giving the consumer a much better apple.

E. E. Conklin reported that our tolerance of 10% is too high for the foreign trade who has adopted a universal tolerance of 5%. He further explained that the common market was adopting a standard packing program. He further noted that our No. 1 grade would be equal to the common market grade of that category, but our extra fancy grade would not meet the conditions of the corresponding grade in the common market.

Norman Healy reported that under the school lunch program there had been less than 700 bids of which the government purchased 427 cars, including 357 from Washington, 43 from California, 12 from Oregon, 4 from Idaho, 6 from Utah, 4 from Colorado, and one from Michigan. These were purchased at a price of $2.00 to $2.50 for trays and about $2.25 for loose apples. All of these cars except the Michigan car would be held west of the Mississippi River and must be shipped by March 31.

WISCONSIN HORTICULTURE

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Henry Mahr, Editor, 10820 So. 27th St., Oak Creek, Wisconsin

Apple Institute Urges Greater National Coordination of Effort

Trustees of the National Apple Institute Apple Growers of America at their mid-winter meeting on February 18-19 in Washington, D. C., reported, discussed and debated many issues. Near unanimous accord prevailed throughout the two day sessions, however, for greater and greater national grower cohesiveness and coordination of effort in all areas of apple grower interests.

Executive Vice President Fred P. Corey in his opening report stressed the ideal structure of N. A. I., a federation of state and regional grower organizations, for accomplishing the objectives and best interests of apple growers throughout the country. The local state and national organizational relationship which makes up N. A. I. . . . provides the foundation for coordinated grower effort at all levels of need.

The establishment of the National Apple Institute Marketing Division in 1961, provided the much needed working liaison between growers and their increasingly coordinated and consolidated sales organizations.

Challenged Corey, "the structure exists and growers are doing a pretty respectable job in most areas . . . but can do much better, **depending on how seriously they really want to invest sufficient effort, interest, enthusiasm and money to work for their own best interests.**"

President William H. Darrow, in his address to the board, provided still further emphasis on the opportunities and challenges and needs for greater grower cooperative effort. "With upward trends in production, the increasing complexities of our economy, the increasing competitiveness of our fruit industry in broader and broader marketing areas for each apple producing state and region, and the continuing decline in producing numbers, certainly it behooves growers to maximize their best interests and efficiencies and dollars, by working together."

Initial budget proposals for N. A. I.'s 1964-65 year endorsed shooting for at least the current year budget of some $180,000 for cooperative national programs in education and publicity, research and marketing work. Final budget adoption will come at the annual meeting, June 28 - July 1, at Bedford Springs, Pennsylvania.

Biggest challenge, relatively speaking, lies with the less well organized state and regional grower organization members of the federation to match per bushel funds with the larger state and regional members.

Other business included reports of continuing growth in N. A. I's school and dental education work, food publicity programs, marketing and other research effort, legislative work in behalf of growers and progress of its Marketing Division.

Mr. Curt E. Eckert, Trustee for the Illinois Fruit Council and Horticultural Society, and Mr. Erwin Klenk, Trustee for the Michigan State Apple Commission stressed similar national grower unity of effort for both the smaller producing state or regional grower group and the larger producing state or regional.

Mr. Floyd Hedlund, Director Fruit & Vegetable Division, AMS, U. S. D. A., reported on the Section 32 Surplus Re-

moval Program for Northwest apples and was given a standing vote of appreciation for the Department's handling of a highly controversial problem.

Mr. Frank Cappy, National Advertising Manager, American Cyanamid Company, presented plans for the 1964 cooperative apple promotion program of American Cyanamid and National Apple Institute.

American Cyanamid Company will be providing to National Apple Institute funds equivalent to one cent per lb. of their fungicidal product, "Cyprex," for use in national apple promotional programs to be determined by N. A. I. Dealers and users of "Cyprex" are being asked by American Cyanamid Company to clip and mail to an audit firm engaged for the purpose, the code number from each carton of the fungicide sold. Funds allocated to the apple industry for apple promotion will be based on the sales tonnage represented by the code numbers submitted.

Fred P. Corey citing N. A. I.'s position in this program, had only commendation and praise for American Cyanamid's interest and contribution to the marketing efforts of apple growers. He cautioned, however, that N. A. I., which has excellent relations with all Agricultural Chemical Companies, cannot "sell" this program for American Cyanamid Company. Mr. Corey suggested, however, that N. A. I. would be receptive of similar participating grant programs from any and all companies who, like American Cyanamid Company, appreciate the mutual value of effective apple promotion.

The Industry Committee on apple grades and standards, coordinated by National Apple Institute, met on February 20th with U. S. Department of Agriculture and Industry Representatives, under the Chairmanship of James F. Laise, of N. A. I.'s Marketing Division. Further progress was initiated in improving our U. S. grades and standards for fresh market apples.

Mite Control During The Dormant Season

By RONALD H. MEYER
Illinois Natural History Survey

(Condensed from
"Illinois Horticulture")

Can anything be done about our major pest control problem during the dormant season? Two suggestions may aid mite control.

First suggestion: Prune out the trees in such a way that spray penetration and coverage can be obtained all through the season. Much higher populations of mites are found in the center and tops of the trees than around the outside where growers usually look most often. Most insect pests are either much larger than mites or move around more rapidly and in wider areas. Therefore, they are more likely to contact the insecticide. Also mites reproduce more rapidly and are often at much higher population levels when they are detected. Since spotted mites are still smaller than European red mites and stay on the underside of the leaves, they are most difficult and expensive to control because of the coverage problem. The most successful growers keep insect populations at levels so low that pests are difficult to find especially during the early season.

Successful mite control needs to be pursued the same way. But when mite populations have increased spray coverage must be much better than that required for insect control just to give the acaricide an equal chance to do as good a job as insecticides do to control insects. If trees are not open so that this is possible the odds of getting the necessary control are just that much greater.

Second suggestion: While working with the trees during the dormant season take time to make sure that the areas of highest mite populations are determined. There are often considerable differences in levels of populations between blocks or varieties within a

block. Often there are differences within areas of a block or variety in a block.

Look for European red mite eggs on the under side of twigs at the roughened places. Look for spotted mites, which are orange during the dormant season, on the trunks or in the litter around the base of the tree where they have protection and can remain dry. Actually most growers will remember these areas by remembering the condition of the tree leaves during and after harvest and where mite control was required during the late season.

Areas which have high mite populations should receive extra mite control efforts when these are being applied. For example; a particular grower may be able to get good coverage of an oil spray from both sides on a relatively small part of the total orchard. This application of oil should be directed to areas where European red mite overwintering egg populations are the highest. Then perhaps a later spray can include an acaricide to the entire orchard. This approach would then tend to even out mite populations.

Sometimes one variety will have as much as ten times as many mites as the other. This should be discovered during the dormant season and appropriate adjustment of the spray schedule can be made.

DON'T FORGET THE JOINT MEETING AT UPHOFF'S

There will be a joint meeting of the Wisconsin Apple Institute board of directors of The Wisconsin State Horticultural society on Friday, April 3, at Uphoff's Restaurant, Lake Delton, Wis. at 10:00 a. m. Mark this date down for this will be an important meeting to decide the possible merger of the two organizations. Other very important problems will be discussed also.

ALL TOPS

By FRANK W. OWEN
Associate Professor of Horticulture
University of Illinois

You've heard "The best apples are in the top." Dick (Dr. R. V. Lott) and I picked Golden Delicious this fall in the Ackles Orchards, Griggsville, Illinois in order to further test the Illinois Golden Delicious maturity color standards. At our first picking, September 17, we took one sample of approximately three boxes entirely from the tops of the trees. These fruits were in the same color range of another sample picked from inside and shaded wood, at our last picking one month later. The top apples averaged 20% higher in sugars than this later harvest even though these later fruits had a month's time to gain sugars. They also averaged 10% higher in sugars than comparable colored fruit taken from throughout the trees at the same harvest time.

Why is there this great difference due to location? What conditions exist in the top which allow this increase in internal quality? Is it possible to handle the trees to create these top conditions throughout the entire tree?

The major difference between the top and other areas of the tree is exposure to sunlight. The leaves are the manufacturing plants of the tree. They utilize inorganic nutrients like nitrogen, phosphate, potash, calcium, magnesium, etc., and water and carbon dioxide to make the organic food materials starch, sugars, proteins, hormones, etc. These are used by the tree in its growth. The power plant used to accomplish all this is the sun. The reaction or manufacturing process is called photosynthesis.

Leaves which are entirely exposed to the sun's rays are the most efficient manufacturing center. The wood supported by these leaves receives a liberal supply of organic food material making it strong. The fruit borne on this strong wood is usually larger and higher in soluble solids (sugar) than fruit on weaker wood. It is the high-quality fruit we want to produce.

If exposure of the foliage to sunlight is the condition which allows the production of high-quality fruit when the trees should be pruned so that all of the fruiting wood is equally exposed. This means it is necessary to open the centers, remove big limbs heading back into the tree, and weak shaded wood around the bottom of the tree and detail the perimeter of the tree so that none of the limbs will be shaded by another.

To do a good job, anticipate or remember where the limbs will be when loaded with fruit. Many branches seem to have good exposure when the crop is off but get weighted down with fruit and overlap another or are overlapped by other limbs.

The north side of the tree receives a limited amount of sunlight and so should be thinner than the rest of the tree.

Look to next years crop when you prune. Remember that a limited amount of strong, well-spaced wood is better than an abundance of weaker, crowded or shaded wood for the production of well-sized, high quality apples.

James Kegel, Prominent Gays Mills Orchardist, Dies

James P. Kegel, owner-operator of Kegel Orchards, Gays Mills, Passed away March 9, at a Milwaukee Hospital. He was 56 years old.

A native of Milwaukee, Mr. Kegel attended Marquette University, graduating from the school of journalism. For a time he published the Crawford County Independent.

A prominent civic leader, he was a member of the Wisconsin Newspaper Editors association, Knights of Columbus, Holy Name Society, Gays Mills Lions Club, and a director of the Wis-

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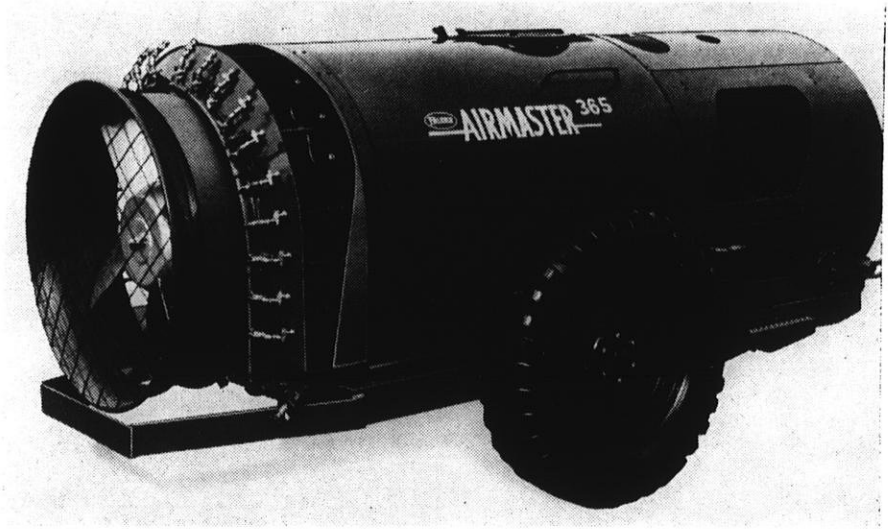

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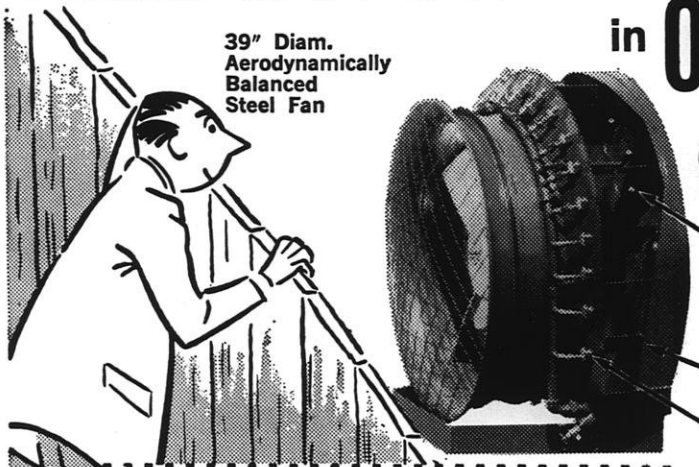

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consin Apple Institute, and the Crawford county civil defense committee.

Surviving are his wife; three sons, two daughters, three grandchildren and his parents, Mr. and Mrs. James Kegel, Sr., Milwaukee.

Funeral services were held Friday, March 13, at the St. Mary's Catholic church, Gays Mills. Interment was in the Gays Mills cemetery.

Need to Strengthen Our Organizations

A Few Thoughts from Our President, Walter Clemens

An all-out effort is needed to strengthen our organizations, the WISCONSIN STATE HORTICULTURAL SOCIETY, and the WISCONSIN APPLE INSTITUTE.

The industry is changing and we must be prepared to meet the changes. A list of a few of these changes can help us to realize the importance of the new trend:

1. Greater production, by greatly increased plantings.
2. Disposition of greater volume of of apples.
3. More selective buying by wholesale, retail and consumer buyers.
4. Our fresh apples are being passed by in favor of convenience and frozen foods.

At the outset, let us say that the factors contributing to the success of an organization are: unselfish work by enthusiastic "industry-minded" members; selection and periodic re-examintion of the most appropriate activities for our industry; good management by officers, board of directors, and in our case include some of the department heads from the Department of Agriculture.

Let us go back to the changes that we are to prepare for:

1. "Greater production, by increased plantings." We perhaps realize the plantings that are going on, when we have tried in the past to purchase a quantity of the better varieties and certain root stock, to find them sold out, and a notation on the order "orders accepted for next season." Plantings in a number of states have increased greatly and higher production is on the way.

2. "Disposition of greater volume of apples." This can best be done by raising the per capita consumption of apples by promotion through the different advertising media. We have a greater volume of apples, but we also have a population explosion in our favor, to take advantage of. In the past years the per capita consumption has dropped for apples, therefore we have a job, not only with the present consumer, but with the added ones. This does not mean for us to advertise a little here or there, but a continuous program that will effectually sell our product. We must build value and acceptance equal to the dollars our customers have in their pockets, before we can expect to have those dollars come out of there. This, however, we cannot do alone as individual members, to any great extent—we therefore need a strong organization to educate, legislate and promote our product. It is true that in the past we have had considerable help by men from the Wisconsin State Department of Agriculture, and from the Wisconsin Apple Institute and its affiliation with the National Apple Institute. Their efforts can be lost, unless we accept and apply them to our best advantage. A strong organization needs many members, not only for the support, but for the ideas, desires and togetherness of all members. This way we can express ourselves, exchange ideas and come up with good answers to our problems.

3. "More selective buying by wholesale, retail and consumer buyers." High quality, good finish and good condition at point of sale will give us better prices and repeat business, whether in bushel or prepackaged lots. If we use brand names to pack under, we should never pack anything but the best

in it. You will gain a reputation with both the retailer and the consumer that can only increase your business. If some years you have only fair quality fruit, change the brand pack name, so as not to lose the confidence and acceptance of your customers built up in your quality pack. Fresh packed bags and bulk apples, if possible, should not be bagged more than a day or two before delivery. It has been found that bagged apples, packed in master containers with separate dividers, delivers the apples best. Grade standards as set up, vary, especially in the interpretation thereof, between buyer and seller, and even among federal inspectors. This has brought about specification buying by the large buyers, who prefer private labeling and strict specification at shipping point.

4. "Our fresh apples are being passed by in favor of convenience and frozen foods." Perhaps because we have failed to educate sufficiently the consumer, especially the younger consumer, in the use and utility of the different varieties; also the importance of fresh apples for the healthy diet, and how to prepare the many tasty eating enjoyments. We need more newspaper, magazine, radio and television articles, and demonstrations, to spread product information. Educate the young today for tomorrow's customer. In this new era of thinking, we should emphasize promotion, advertising and merchandising of fresh apples. We feel at times the going is rough in the apple business. What about our competitors? They have rough going also at times. Frozen food and canned food people are concerned about available space in retail stores, to properly display their merchandise. This shows the pressure for retail sales space for our and their products. Therefore it is a fight for every advantage, every inch of space and exposure. We have the greatest of all advantages, the eye appeal, and the built in flavor and goodness of our product—THE APPLE.

WOMEN'S PAGE

By now the "apple-grower" ladies should be well on the way of getting caught up with "packed away" mending, and sewing which had to wait till the crop was all sold. At least that was my predicament here—I am really enjoying my sewing and knitting, after such a long time of not being able to get at it. I hope you folks have been saving apple recipes, as we are always looking for them—also new ideas for our Convention next Fall. We had such a wonderful turn-out last Fall, hope you will all be able to come this Fall.

Mrs. Walter Clemens

BAKED APPLES

6 medium sized Baking Apples (Rome Beauties)
6 Tbs. Brown Sugar — 3 t. butter
1 cup white sugar — 3 cups water
⅓ c. lemon juice — 1 t. salt
3 Tbs. cornstarch — 3 t. red vegetable food coloring.

1. Pare and core apples. Place in CASSEROLE. Fill each center with 1 T. brown sugar, ½ t. butter. Pour following sauce over apples.

2. THE SAUCE: Bring to a boil sugar, water, lemon juice, salt, cornstarch. Stir in red vegetable coloring.

3. Bake 45 min. 375° preheated. Baste several times.

APPLESAUCE COBBLERCAKE

6 T. (¾ stick) butter
⅓ c. firmly packed brown sugar
½ c. applesauce
1 T. corn syrup
½ t. cinnamon
2 c. sifted flour
¼ c. granulated sugar
3 t. B. P.
⅓ c. shortening
1 egg
½ c. milk

1. Cream butter or margarine with brown sugar until fluffy in small bowl; stir in applesauce, corn syrup, and cinnamon until well-blended. Set aside for topping in Step 3.

2. Sift flour, granulated sugar, baking power, and salt into medium sized bowl; cut in shortening with a pastry blender until mixture is crumbly.

3. Beat egg with milk until blended in small bowl; pour over flour mixture; stir just until blended. Drop by tablespoonfuls into a greased 9" round layer-cake pan. Spoon applesauce topping over dough. Bake in hot oven (400°) 35 minutes, or until cobblercake starts to pull away from side of pan. Serve with cream, sweetened whipped cream, or ice cream, as you wish.

Planting Systems — What's Best Where?

DR. F. A. GILBERT, Professor
Department of Horticulture
Peninsular Branch Experiment Station
University of Wisconsin
Sturgeon Bay, Wisconsin

The systems of growing strawberries which I will present in this paper are not the conventional hill, matted row, spaced row, etc., but rather systems of planting which have developed due to some specialized program of the grower.

The three so-called systems that I would like to call to your attention are:

1. The Mechanized System of Growing Strawberries.
2. A Specialized Marketing System of Growing Strawberries.
3. A Specialized Production System Developed as a Result of Temperature Advantages.

The Mechanized System of Growing Strawberries

I think everyone is aware of the fact that the closer we get to complete mechanization in the growing of a crop the better chance there is of making a profit from the enterprise. Strawberries are no different than any other crop and Mr. Philip Erickson, Baileys Harbor, Wisconsin is making every effort to at least approach complete mechanization. The machinery that Mr. Erickson is using is not the only types on the market but they will serve to show what can be accomplished with strawberries mechanically.

After preparing the field with conventional tillage equipment the next operation is the establishment of ridges to eliminate wet feet during the early spring after the snows have melted. The ridging is done with a home made blade and discs which give a flat-topped ridge approximately 2 feet wide and elevated 6-8".

The plants are set with a Holland planter with an automatic liquid fertilizer attachment which supplies a starter solution. For approximately the next month all of the weeding is done with a Buddingh Inrow Weeder and a Friday Self-Propelled Power Hoe. With these two pieces of equipment hand hoeing during the first growing season is eliminated prior to runner rooting. However, as the runner plants begin to root it is necessary to abandon this equipment and switch to chemical weed control. A separate boom sprayer with a power take-off pump is used for weed control sprays only. This combination just about takes care of the weeding for the first growing season.

Even though Door County is an ideal place to live, we are not blessed with rainfall in sufficient quantity at the proper time so Mr. Erickson considers irrigation a "must." The irrigation system accomplishes four things — namely:

1. Supplies supplemental water.
2. Summer fertilization.
3. Protects the blossom if necessary during spring frosts.
4. Protects Everbearing fruits against freezing in the fall.

One more piece of equipment used during the first growing season and again during the fruiting season is a Bean 200 gallon, 12 gallon per minute sprayer for insect and disease control. Mr. Erickson does not use his sprayer for this operation as he needs more water, different nozzles, and additional pressure.

We've now come to the end of the first growing season and in the "North Country" the time for mulching arrives in about mid-November. As any strawberry grower knows this used to be a very distasteful job when it was necessary to distribute the mulching materials with a fork. This chore is very easily and very quickly accomplished today with a Friday Mulcher—so one more operation is almost completely mechanized.

When spring rolls around (mid-April) the mulch has to be removed and this chore is now done from the tractor seat with a Pollard Windrower. I watched this operation last season and Mr. Erickson removed the mulch from his berries at the rate of 3 miles per hour while sitting on the tractor.

The harvesting of the berries is still very conventional but some ideas are brewing and I expect to see at least a semi-mechanical piece of machinery in the very near future.

The last piece of machinery which is used during the harvest season is a Sunbeam Rotary Mower. The mower is used to "top" high weeds should they be present in the field or to mow off some of the leaves prior to the last harvest.

A Specialized Marketing System of Growing Strawberries

This type of an operation has been highly developed in Metropolitan Wisconsin and goes under the name of "pick-your-own" — "you pick it," etc. Perhaps the grower who has grown strawberries for the longest period of time is Mr. Vincent and his sons, Lake Geneva, Wisconsin. The strawberry planting has grown gradually over the years and has included as much as 30 acres which were entirely picked by the consumers. The requirements for this system of growing are:

1. Good rows and yields.
2. Varieties which will freeze.
3. **Ample parking space.**
4. Nearness to a population center.

Mr. Vincent was originally in the dairy business with pure bred stock but he is no longer in dairying (which is almost unheard of in Wisconsin) but concentrates all of his and his sons

efforts in the production of strawberries for the ever-increasing number of "Pick-Your-Own" customers.

A Specialized Production System Developed as a Result of Temperature Advantages

Many areas in the eastern half of the United States try to produce Everbearing strawberries for the fall market, but very few of these areas can do this successfully. However, Mr. Erickson with a planting near Lake Michigan in Northern Wisconsin, has almost the ideal summer temperatures for growing this crop. The mean summer temperature would be considered perhaps too cool by many people, but the Everbearers thrive on it.

The varieties which have proven most successful have been the old standby Gem, and a variety from Wisconsin, Sultan. The fruits are marketed from mid-August until early November and have brought higher prices on the Milwaukee market than have the California berries which arrive at that time. The production has been quite good (up to 20,000 pints per acre) but Mr. Erickson is striving for a quart per plant or 26,000 pints with his system of planting.

I probably should add that the planting is protected from freezing with an irrigation system which is used practically every year to prolong the harvest season by coating the fruit with ice during the cold fall nights.

The finishing touches for a high quality, uniform, attractively packaged product are supervised by Mrs. Erickson in the centrally located packing shed just prior to placing the flats in a gayly decorated refrigerated truck which is parked and operating right at the shed.

Before too many people get excited about an Everbearer planting which might be as successful as Mr. Erickson's let me list some of the rather exacting requirements:

1. Relatively cool summer temperatures, particularly during the latter part of July and during August.
2. The "know-how" of growing strawberries which are more exacting than June bearers.
3. Irrigation.
4. Volume enough to supply a large market outlet.

I've enjoyed very much talking with this group and if you ever find yourself in the ideal vacationland of Door County, Wisconsin, stop in to see me and I'll be happy to show you the systems of planting that I've discussed today.

STRAWBERRY DATA

Peninsular Branch Station 1963

Variety/ Selection	Yield Qts./A.	Size *	% of Fruit Ripe 6|25 - 7|2	7|3 - 7|12	7|13 - 7|22
Wis. 5831	10,062	214	0	56	44
Wis. 5826	9,330	194	7	57	36
Vesper	8,064	166	0	66	34
Sparkle	7,935	130	26	63	11
Jerseybelle	7,543	216	0	59	41
Wis. 5827	7,073	168	0	80	20
Surecrop	6,692	146	33	52	15
Robinson	6,619	219	37	52	11
Wis. 5828	6,104	164	0	79	21
Wis. 5814	5,755	145	0	71	29
Earlidawn	5,580	140	49	52	15
Catskill	5,351	140	56	41	3
Redglow	5,014	134	18	73	9

* Size—Weight of 300 fruits in ounces (total of 100 fruits from each of 1st three pickings).

F. A. Gilbert

Prof. George Klingbeil
Horticulture Bldg. -U. of Wis.
Madison 6, Wisconsin

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FIRE BLIGHT – Still a Puzzling Disease of Apples and Pears

EARL K. WADE

Extension Plant Pathologist
University of Wisconsin

Although fire blight was noticed as early as 1780 in the Hudson Valley fruit region, and the cause of the disease was definitely established by Burrill of Illinois in 1878, several aspects of the development and spread of the infection still puzzle researchers and orchardists. True, we do have several control measures that are quite effective when used correctly and consistently. However, the fact remains that blight-susceptible varieties of apples and pears are seriously damaged by fire blight attacks in many fruit growing regions of the country when weather conditions are favorable for its development.

A Bacterial Disease

Fire blight is caused by the bacterium, **Edwinia amylovora.** It is known to infect many other host plants in addition to apple and pear. Examples are hawthorn, mountain ash, quince, spirea, and pyracantha.

Symptoms and Type of Infection Vary

Fire blight can attack any part of the tree from the roots to the leaves, but blossoms, twigs, spurs, terminals, leaves, water sprouts and sucker growth, fruits, and portions of the smaller branches are more commonly affected. In Wisconsin, twig and terminal blight are most common. Bloom infection apparently is of minor importance in our state most seasons, at least on apple.

In blossom blight the infected blossoms suddenly wilt and soon turn from light to dark brown. As the disease goes down the pedicel, the tissues become water-soaked and dark green in color. Droplets of clear, milky, or amber-colored exudate or ooze containing the bacteria may appear on the pedicels. The infection continues down into the spur and out into the leaves which soon are blighted and turn dark. These blighted leaves typically remain attached to the tree throughout the season.

Twig blight symptoms are similar to those of blossom blight. The bacteria invaded bark turns dark green with an oily appearance, and drops of exudate appear under conditions of wet weather or high humidity. Leaves of blighted twigs and terminals remain light to dark brown in the case of apple, while on pear both the bark and leaves generally become darker—almost black in color. Terminal infection develops very rapidly when conditions are ideal for infection. From 6-12 inches of a terminal may become blighted over a 23-hour period, and it is not uncommon for them to blight back one to three feet, depending on terminal length. In young trees the bacteria may continue infection down the branch to a main limb and on into the tree trunk killing the tree.

A definite line between diseased and healthy tissue occurs at the outer boundaries of the infection. A canker is produced around the base of a blighted twig or spur. The invaded or infected portion of the bark (the cankered area) gradually becomes dry and somewhat depressed, but with a smooth surface. The canker is usually quite regular in outline.

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Knowledge of General Disease Cycle Is Necessary in Order to Know Why Certain Control Measures Are So Important

Certain facts concerning the disease cycle of fire blight are well known and understood; other aspects of infection and spread of the disease are still obscure.

Primary Infection. The origin of primary infection in the spring is still somewhat of a controversy among plant pathologists. Early investigations have shown that the bacteria can overwinter in the tissues of the host, especially in the large body and limb cankers which therefore are called "hold-over cankers." With ample moisture in the spring, these cankers produce an infectious ooze. At first it was assumed that bees and other pollinating insects carried the ooze from the cankers to the blossoms and twigs, and in so-doing, originated the spring infections. However, later it was found that flies rather than bees and similar insects were attracted to the ooze, and these did not visit the flowers. It was also discovered that the oozing usually occurred after the first fire blight infections appeared in the spring.

Later on it was determined that infection could take place by the bacterial ooze being carried and spread by meteoric water (rain, dew, mist). Additional investigations showed that the bacteria could survive from one season to the next in a low percentage of the blighted twigs. Several workers reported that from 2 to 10 per cent of the blighted twigs of certain varieties contained live bacteria in late winter and early spring.

Very recently, Goodman at Missouri reported that he and Baldwin had in mid-January isolated fire blight bacteria from 48% of the apparently healthy apple buds examined in four different orchards. Goodman goes on to say that these "latent" bud infections may or may not become active in the spring, and that the factors influencing "reactivation" are not known. He states that they have been associated with moisture, but are probably more closely related to the influence that moisture has on rapid vegetative growth.

Based on his findings, Goodman suggests that these latent bud infections may account for the widespread occurrence of fire blight in orchards where over-wintering cankers are not in evidence. They also may explain the occurrence of the disease on two-year-old nursery stock where blossom infections cannot be a significant source of primary inoculum.

Secondard Infection. The main source of secondary spread of fire blight has been considered to be the infection of the blossoms by bees and other insects in the process of pollination. In 1960 New York workers reported that temperatures must be above 65° F. and humid conditions prevail during the bloom period in order for the bacteria to become active enough to produce blossom blight of any consequence.

Powell of Illinois has studied the development of blossom blight over a period of several years, and based largely on his observations, has come up with a "formula" for forecasting the development of blossom blight during any one season. The factors and data upon which the formula is based and the procedure followed in using it are briefly these as outlined by Powell:

A. Field observations at different lo-

cations in Illinois during the past 10 years have shown a possible correlation between blossom blight and pre-bloom temperatures.

B. This led to a study in which it was found that freezing temperatures reduce the number of viable cells of the fire blight bacterium or pathogen. Each repeated freeze killed an additional number of cells.

C. By using this information together with facts accumulated over the years, predictions of a possible severe infection of blossom blight were successfully made for the two fruit growing areas of the state for the years 1962 and 1963.

D. Probably the most important effect of pre-bloom freezing is the reduction in the number of viable bacterial cells in the surface ooze of the cankers. It has been reported that the concentration of the bacteria used for inoculation purposes has a direct relationship to the length of the incubation period and the number of successful inoculations. For example, 200 bacterial cells per milliliter will not infect terminal twigs. Twenty thousand bacterial cells per milliliter will infect 40% of the twigs inoculated and the incubation period will be 7 - 10 days. Inoculum of 20 million bacterial cells per milliliter will infect 100% of the twigs inoculated and result in an incubation period of 4 - 5 days. Thus, any factor that causes a reduction in the number of viable cells or a dilution of them contributes to the reduction in the amount of fire blight.

E. The following conditions of weather necessary for **blossom infection** are:

1. Temperature
   a. At least 30 "degree days" (above 65° F.) between the latest pre-bloom freeze and early bloom. ("Early bloom" is that stage when the first or center blossom in a cluster opens; "degree days" are the degrees which accumulate from day to day above 65° F between the latest pre-bloom freeze and the early bloom period.)
   b. Maximum temperatures between 70 - 80° F during early bloom.
2. Moisture
   a. Adequate rainfall preceding bloom so that normal growing conditions prevail.
   b. Light, occasional rains with high humidity (70%+) during early bloom.

F. Conditions interfering with or preventing blossom infection are:

1. Temperature
   a. Freezing temperatures close to early bloom. Less than 30 "degree days" (above 65° f) between latest pre-bloom freeze and early bloom.
   b. Maximum temperature either lower than 65° F or higher than 86° F during early bloom.
2. Moisture
   a. Drouth preceding and during early bloom.
   b. Excessive rains during early bloom.

Example of how formula works:
(Data taken from Orchard)

Date (May)	Temp.	Degree days accumulated	Rainful
8			
9			
10	36-68		
11	48-78	12	
12	57-84	30	
13	60-87	52	
14	66-85	72	
15	54-73	--	.54
16	40-68	--	Trace
17	51-62	--	Trace
18	54-60	--	.05

There was no freeze close to early bloom; rain was adequate; degree days accumulated between latest pre-bloom freeze and early bloom—72. Blossom blight was forecast and did develop, resulting in a severe infection.

Aerial Bacterial Strands are another Means of Secondary Spread of Fire Blight

Keitt and Ivanoff at Wisconsin in 1937

reported the occurence of a very interesting phenomenon in connection with the development of fire blight infection on the blossoms, fruits, and shoots of pear. They observed the presence of a special type of bacterial exudate occurring in the form of hair-like strands.

These strands were made up of cells of the fire blight bacterium, bound together by a cementing substance. They were more or less curved, glistening, and almost colorless. They looked much like strands from a spider web, or down from cottonwood seeds. However, when placed in a drop of water the strands disintegrated.

The bacteria in these strands remained viable (alive) for more than 7 days. As the strands were easily broken off and carried around by wind and air currents, it was thought that they could be an important means of spreading fire blight infections.

Powell reports that these bacterial strands have been observed in Illinois orchards during periods of active blight development. He believes that a major portion of twig infection is caused by bacteria which are blown around in these aerial strands.

Other Factors Affecting the Development of Fire Blight Infections

1. Cultural practices that affects the growth of apple and pear trees have a vital bearing on fire blight. Infection is favored greatly by succulent growth of the trees resulting from the use of ample or excessive amounts of nitrogen fertilizer plus adequate moisture. Thus, in most cases clean cultivation or keeping the ground bare in the orchard is more conducive to blight development than where a sod cover is maintained.

2. Maximum temperatures between 70 - 86° F are most favorable for activation and spread of the fire blight organism. Adequate rainfall preceding

bloom and light rain or humid weather during early bloom are very favorable for blight development.

Drought preceding and during bloom, or excessive moisture during bloom are unfavorable for fire blight, as is a freeze close to early bloom. Temperatures running below 65° F are unfavorable.

3. Varieties vary to a considerable degree in their reaction to infection. Apple varieties such as Yellow Transparent, Wealthy, Transcendent Crab, and Jonathan are considered very susceptible; Golden Delicious, Grimes Golden, Snow, and most of the crabs (Prairie, Virginia, Hyslop) are classed as fairly susceptible.

Red Delicious, Whitney, Dolgo and Hopa Crabs, N. W. Greening, Dutchess, and Northern Spy are thought to be fairly resistant to fire blight, while Mcintosh, Dudley, Ben Davis, and Wolf River seem to have considerable tolerance to the disease.

Pear varieties like Bartlett, Clapp's Favorite, Flemish Beauty, Patten, and Anjou are all susceptible with the Bartlett being very susceptible. The Kieffer and Seckel varieties on the other hand are fairly resistant, and the Lincoln is quite tolerant to fire blight infection.

Summary of Suggested Control Measures

A. Cultural Practices:

1. Succulent new growth is very susceptible to invasion by fire blight bacteria. Use nitrogen fertilizer sparingly, at least on susceptible varieties. It is better to keep these trees on the slightly "light-colored" side. Heavy nitrogen feeding is dangerous where fire blight is concerned. Sod culture is advised where fire blight is a problem, except perhaps for the immediate area around the tree trunk. Manure and other slowly available organic fertilizers generally should not be used on susceptible varieties, especially young trees.

2. Avoid heavy and excessive pruning, as this promotes the development of succulent new growth.

B. Checking for Blight and Removal of Blighted Twigs, Branches, etc.

1. Remove all water sprouts and sucker growth as they appear. One method is to wear leather gloves and rub off these shoots before they become woody. If a pruning shears is used, be sure to disinfect or sterilize it before making each cut using a suitable disinfectant, such as a 1-1000 strength solution of mercuric chloride, or alcohol, or a strong B-K type solution (Calcium or sodium hydrochlorite). If the mercury solution is used handle with care as it is poisonous and is also corrosive to metal.

We do not recommend summer pruning to remove active twig and terminal blight as there is too much danger of actually spreading the infection. Also, reports indicate that only a small percentage of the blighted twigs carry the infection over from one season to the next.

2. Check for, and if possible, remove all hold-over cankers during the dormant period. It is a good idea to locate and mark them during the summer while they are still active; in this way they can be more easily found for removal in the fall or late winter. Be sure to sterilize the pruning tools before moving to a new location.

Special chemical mixtures and solutions have been developed by research workers in California and elsewhere for

CONNELL RED

"A really choice apple"

One of the very finest new varieties, excellent flavor, outstanding color, early production, good storage life, and proven hardiness. A prominent Midwest orchardist writes "CONNELL RED stores with Winesap and has the flavor and texture to rival Delicious."

Listed below are some of the WISCONSIN nurseries and garden centers now handling the Connell Red:

Ajak Gardens
Hudson

Arnie's Garden Center
1643 Harding Avenue
Eau Claire

Blue Ribbon Garden Center
513 N. Main Avenue
New Richmond

Erickson Super Market
River Falls

Gartman's Gardens
4611 Lakeshore Drive
Fond du Lac

Hall Nursery
Elmood

Mueller Nursery
1600 Mansfield
Chippewa Falls

Erickson Super Market
Hudson

May's Greenhouse
1320 Jeffers Road
Eau Claire

Breck's Nursery
711 W. Knapp Street
Rice Lake

Fancher's Nursery
Sturtevant

Greaves Nursery
6170 N. Port Washington Road
Milwaukee

West Hill Garden Center
Wausau

Patland Farm & Nursery
Route 4, Box 27
Marshfield

J. W. Jung Nursery, Randolph (Mail Order)

Nurseries in other states which carry the CONNELL RED are:

Bunting Nursery, Selbyville, Delaware
Ferris Nursery, Hampton, Iowa
Farmer's Seed & Nursery, Faribault, Minnesota
Gurney's Nursery, Yankton, South Dakota
Swedberg Nursery, Battle Lake, Minnesota

FOR SALE: John Bean used and new sprayers.

Connell's Sunridge Orchards, Inc.

Box 89 **Menomonie, Wisconsin**

treating fire blight cankers. It is said that these chemical treatments will penetrate the infected tissue and kill the bacteria without the necessity of cutting out the cankered area. As these treatments are rather complicated, those persons interested in obtaining the specific details should write directly to Dr. Harry J. O'Reilly, Extension Fruit Pathologist, College of Agriculture, University of California, P. O. Box 253, Hunt Hall, Davis, California.

C. Use of Sprays for Fire blight control

1. Some states, (Illinois, Indiana, Missouri) are suggesting the use of a dormant copper spray in the spring. Use either straight copper sulfate (Instant Grade Copper Sulfate) 4 pounds per 100 gallons before bud-break, or Bordeaux mixture, 4-4-50 or 4 pounds of a 50-53% insoluble fixed copper fungicide per 100 gallons. The Bordeaux or fixed copper sprays can probably be applied at either the dormant or delayed-dorman (green tip) stage. Oil in any form should not be combined with these copper sprays. There is fairly good evidence that the yearly use of a dormant copper spray will materially reduce the fire blight problem in an orchard.

Goodman of Missouri also suggests the use of a copper spray late in the fall, perhaps in late October.

2. Spraying during bloom is of doubtful value under average Wisconsin conditions. Spray trials conducted in southeastern Wisconsin in 1954 and 1955 by Moore and Leben using three streptomycin applications during bloom and one at petal fall did not control the severe twig and terminal infection that developed, even though extensive blossom and spur blight appeared earlier in the 1954 tests. However, it is suggested that growers keep a daily record of the temperature and moisture conditions from late April until early bloom in

May and apply Powell's formula. If the tabulation shows that conditions are favorable for blossom blight development, it may be feasible to spray 2-3 times with streptomycin during bloom at 50 to 100 ppm strength. Streptomycin sprays should not be used on bearing trees after bloom.

Growers not wanting to use Powell's formula can try the following as a guide:

Apply streptomycin sprays during bloom if at any time after the first blossom opens the following conditions occur or are expected:

1. 65° F or higher and rainfall or
2. 65° F or higher and relative humidity 60% or higher.

Bordeaux mixture, 2-6-100 can be used in place of streptomycin, but there is always the danger of Bordeaux sprays causing fruit russeting.

D. Use of Blight-Resistant Varieties

In areas where fire blight is a rather perennial problem, it is best to avoid the planting of susceptible varieties of apples and pears. Growers should even consider the possibility of cutting down mature trees of the more susceptible varieties in the orchard as a few susceptible trees can provide the primary inoculum each year for the entire planting.

E. Control Insect Pests in the Orchard

Insect pests, especially aphids and leaf hoppers should be prevented from building up high populations in orchards where fire blight is a problem.

Notice: To Members, Manufacturers and Dealers Regarding Summer Meeting

The Wisconsin Agricultural Extension Service in cooperation with the Wisconsin State Horticultural Society is conducting its annual summer fruit growers' tour and machinery show on Thursday, July 23, starting at 10 a. m., near Sturgeon Bay, Wis. Headquarters for the tour will be the Peninsular Experiment Station (about three miles north of Sturgeon Bay on State Highway 42).

Fruit growers will have an opportunity to go on conducted tours of fruit research and demonstration plots at the station and can visit nearby apple and cherry orchards. This tour will coincide with the cherry harvest season, so a tour of a cherry processing plant has been arranged.

Manufacturers and dealers of machinery and equipment are encouraged to exhibit their products at this show. Ample space is available on the experiment station grounds. However, in order to provide an orderly machinery show, we are asking exhibitors to notify Dr. F. A. Gilbert, Superintendent of the Station, before July 1 what machinery and equipment they intend to exhibit and also the approximate area required. Some covered space will be available in steel buildings having large open doors on one side, and if necessary large tents will be erected.

This will be the first summer machinery exhibit held in Wisconsin for fruit growers in many years. We hope exhibitors will take advantage of the opportunity. There is no charge for exhibitors, exhibit space, or those attending the meeting.

From Mrs. Mathisen

The following is an excerpt of a letter received recently by your President, from Sid Mathisen:

—Sid has been very happy with his experimental work and feels that he is achieving results. The hydroponic tomatoes, which have sea-solids along with the fertilizer, have less seeds and more solid meat, and we think, a better flavor. The hydroponic tomato has a milder flavor and less acid content than a field grown tomato. — — We are the first to live in this house—2 bedrooms, all on one floor, no basement, but a utility room. I like not having to climb the stairs. It is completely furnished, including electric stove, refrigerator and automatic furnace, and water heater. Up until two weeks ago we surely appreciated the gas furnace. — — I miss shopping in Milwaukee, as well as all our friends up there. — —

Hope by now you have received your recipes which were so kindly written up by Mrs. A. Bassett of Baraboo. We tried to send some to every woman of the Auxiliary—of course only those who were at the meeting do we have a record of. We surely would like a more complete list of the ladies interested in the Auxiliary of the WISCONSIN STATE HORTICULTURAL SOCIETY, so wont you please send me a card or letter, giving your name and address, and then you will receive mail pertaining to the Auxiliary. Thank you. Mrs. Walter Clemens, 10813 N. Port Washington Rd., 13W, Mequon, Wisconsin.

National Apple Institute To Get Funds

For the fourth straight year, American Cyanamid Company will support an outstanding fall sales promotion campaign which will be conducted by the National Apple Institute.

Cyanamid's cash contribution will be added to the Institute's regular sales promotion fund. It will enable the Institute to conduct a more extensive fall apple promotion program than ever before!

To build the Cyanamid donation, HERE'S ALL YOU NEED DO: Cut out the code number on the bottom of the box and send it to:

Agri-Audit Bureau
P. O. Box 1718
Trenton, New Jersey 08607

on or before August 31!

This independent agency will verify all receipts, and send a weekly report to Cyanamid and the Institute.

In September, Cyanamid will send the Institute **one cent for every pound** of CYPREX represented by these code numbers. This means 25¢ for each 25-lb. box, or 50¢ for each 50-lb. box.

The more code numbers you send in, the more money the Institute will have to promote apple sales this fall! Every penny spent on promotion helps every apple grower in the country to sell!

Report From National Dwarf Fruit Tree Meeting

G. C. Klingbeil
Extension Specialist, Fruit Production
Dept. of Horticulture University of Wisconsin

The Dwarf Fruit Tree Association had their annual winter meeting and field trip in the vicinity of Hartford, Michigan, on March 10 and 11. Many fruit producing states were represented and ideas, results and comments were freely exchanged. Following are a few items that I feel may be of interest to Wisconsin growers.

Clonal or size-controlling rootstocks are still being widely planted, and it appears as though greater use will be made of them. The statement by a representative from Ontario, "There are now over 200,000 trees in the province on clonal rootstocks which is one-fifth of the total tree population," is representative of most comments. The M VII stock is probably the most popular at this time, but more interest is developing in MM 106. They are about the same size, but the MM 106 does not sucker from the ground as readily as M VII. The MM 106 also appears to have good anchorage and may be more productive. There is still an interest in M IX for highly intensive systems of culture, however, this stock may be displaced in the future by M-26. There appears to be no over-all best stock, but certainly there are suitable stocks to fit certain planting distances and certain types of culture. It is quite apparent that apple culture is becoming more intensive and clonal rootstocks may be a useful tool to fit the needs of this type of culture.

There seems to be a general feeling that the nation is overplanted with the Red Delicious variety, and at the moment there appears to be no good solution to the situation. Comments from eastern states indicate that their interest in dessert-type varieties may change

to interest in processing varieties in the near future. Wisconsin growers generally have not gone overboard with Delicious, probably because we are predominantly a McIntosh state, so growers seem to favor varieties of this type. Wisconsin growers in the Door County Area, where processing is already established, may now be in a more favorable position.

Tree spacing is a subject of interest due largely to the trend toward more intensive culture. With the M VII and MM 106 the average spacing of 15 x 25 is favored. This figure may vary a few feet one way or another. Spur-type trees on seedling roots are generally spaced a little further apart. There is quite an interest in high density plantings of trees on clonal rootstocks and on seedlings. The question has not been resolved as to which procedure is best for such plantings: the modification of standards by pruning and other methods, or to use the size-controlling stocks.

The question of training and pruning is a perennial one. Under Wisconsin conditions a good modified leader system is favored. Scaffolds must be established early, the leader must be kept dominant, and the total volume of the tree must be kept in a condition favoring fruiting once the tree comes to bearing. Care should be taken not to lose the leader of young trees. Early fruiting of the leader and the encouragement of strong growing laterals may account in part for early loss of the leader.

Following are comments of Wallace Heuser, Hilltop Nursery, Hartford, Michigan, about several clonal roothootstocks:

M IX: A full dwarf, brittle roots, requires support, needs good soil and plenty moisture. Probably the most productive of the EM series.

M 26: Between M IX and M VII in size, requires support, very productive and may out produce the M IX. May have quite an overgrowth at the base.

M VII: A spreading-type tree, weak anchorage with Red Delicious, suckers from root with all varieties, suckers more severe on trees without support. Requires good soil.

MM 106: About same size as M VII but more upright, good anchorage does not sucker, and may be more productive than M VII.

M II: A semi-dwarf type, a well anchored, spurry upright growing tree; not tolerant of droughty conditions.

M 111: The same size as M II, a very hardy, drought tolerant tree.

MM 104: A three-quarter sized tree, well anchored, and probably the most productive of the MM series.

MM 109: A full-sized tree, probably no future.

N. A. I. Annual Meeting

The National Apple Institute's annual meeting will be held June 28 to July 1 at Bedford Springs, Pa. More details of the program will be in the May issue.

Co-op Produces Frozen Apple Juice Concentrate

A Washington state fruit grower's co-operative is converting 50,000 gallons of apple juice a day into a full-flavor frozen concentrate for beverage use through a process developed by the U. S. Department of Agriculture.

This new enterprise is expected to provide an alternative market for 50,000 tons of apples a year and to create about 100 jobs for local people.

The co-operative reports a good demand for its new product in food stores on the west coast.

Finding New Uses

Homemakers reconstitute the frozen concentrate into a beverage with all the flavor of fresh apple juice by adding three parts of water to one part of concentrate. Developed by USDA's Agricultural Research Service, the process is part of a broad effort to find new uses for farm products.

Key to making full-flavored juice concentrate is an essence recovery procedure worked out several years ago at the eastern utilization research laboratory, Philadelphia. In this operation, the essence (aroma) is stripped from the juice and concentrated, then restored to the juice, which in the meantime has also been concentrated. Juice concentrates made by this essence recovery process are widely used by the jelly industry.

The new product is made by a process developed at the western utilization laboratory, Albany, Calif., in a co-operative study with the Washington State Apple Commission. At that time ready consumer acceptance of the product was indicated by a market test conducted co-operatively with USDA's Agricultural Marketing Service. A succession of short apple crops delayed commercial adoption of the process.

Full Capacity

The Washington co-operative began commercial production of concentrated

apple juice for beverage last September and is now producing at full capacity. Chemists and chemical engineers of the eastern and the western laboraties provided technical advice and assistance to the co-operative in adapting the process to commercial use.

The process consists of washing fresh, sound apples and grinding them to a coarse pulp. The juice is removed from the pulp in a hydraulic press, screened, and passed through the essence-removal unit, which strips the volatile fresh-apple aroma from the juice. The essence is concentrated to a clear, colorless liquid.

The stripped juice is clarified and then concentrated, to about 20 per cent of its original volume, at low temperaturse to avoid heat damage. Then the concentrate juice is chilled, pumped to a blending tank where the essence is restored, and packed into six-ounce cans and frozen.

Are the Benefits Worth The Risk?

Our daily lives bring us in contact with many things that can be dangerous. The automobile can kill as well as cripple. So can farm tractors, industrial machinery, the airplane, water, and electricity. All of these things are essential to our economy and we do not stop using them because of crippling or fatal accidents that occur from time to time. An overdose of salt can be fatal, and so can an overdose of many drugs, including antibiotics and vitamins. The iodine in your medicine cabinet is labeled "poison" although it is an essential element in man's diet. Many drugs are highly toxic when improperly used yet no responsible practicing physician would hesitate to prescribe them when it is appropriate to do so. The protection of our children against smallpox

and polio by immunization has not been without some casualties. But in each of these instances, the potential for benefit greatly outweighs the risk involved. And so it is with pesticides. They can be harmful when used wrongly, but when used properly the benefits to man are tremendous.

The use of pesticides to protect our crops and livestock against insect attack has provided Americans with an abundant supply of high quality food in a world where one out of two people is poorly nourished and one out of every six is unrelievedly hungry. Much human suffering and many fatalities have been prevented by the use of insecticides to control the insect vectors of malaria, yellow fever, dengue, encephalitis, and plague. In India alone the World Health Organization's anti-mosquito program has lowered the incidence of malaria—still the world's No. 1 killer—from 78 million a year to less than 5 million a year.

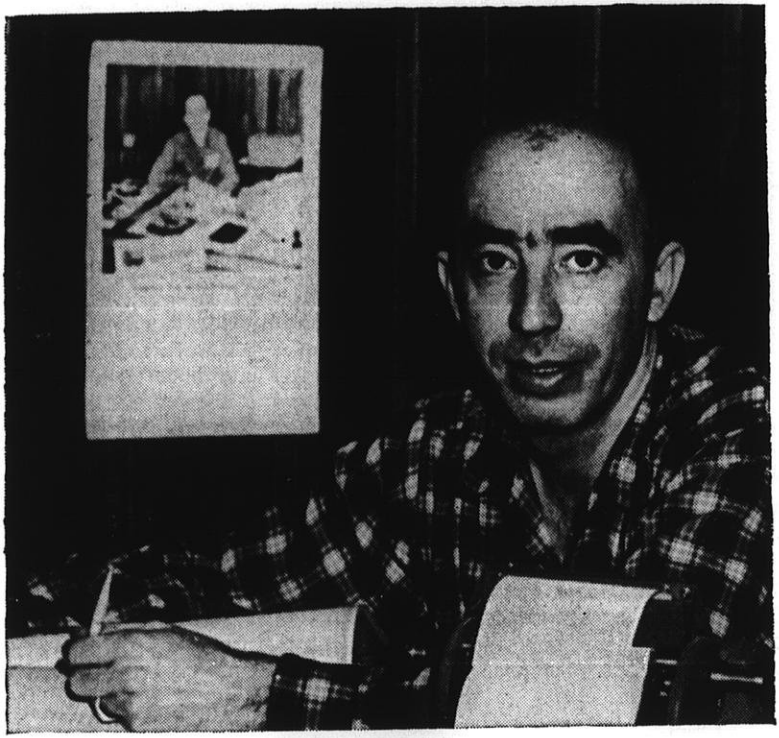
The use of pesticides is a chance we must take because they create benefits for man that cannot be achieved by other presently existing means. We should be free to use them in those areas where they can be applied safely for the benefit of man but at the same time we should be alert to all possible dangers stemming from their use. We must learn all that research can teach us about the characterics of the chemicals, their persistence in and on feeds and foods, their persistence in the soil, their entrance into and persistence in surface and ground water, and their effect on other animal species.

We should explore vigorously the new insect control procedures. Some of these newer weapons are dramatic indeed, particularly those that dupe the insect into bringing about its own destruction. Insects can be sterilized by gamma radiation or by chemicals with sterilizing activity, lured to their death by powerful attractants, annihilated by insect-attacking disease, or repulsed by insect resistant varieties. Some of these methods have been used with great success in a few instances but at this time their application is limited. Insecticides are today's dominant weapon in man's eternal war against his insect enemies.

—J. P. Sleesman

Berry Tour June 3

The Wisconsin Berry and Vegetable Growers' Tour will be held June 3rd, beginning at 10 a. m. at the Hipp Berry Farm, Janesville, and continuing at the Pine Bluff Fruit Farm, Brodhead, Wis.



"Nothing's changed between captan and me" *says* MR. EDWARD A. LEATHERMAN, owner Chert Mountain Orchards, Purgitville, West Virginia.

"The picture over my right shoulder was taken five years and several million apples ago . . . I said in 1959 that captan proved best for me, and it still does."

Why? Because captan has more than fungicidal action! It reduces biennial fruit production. It promotes better finish and *does not* interfere with chlorophyll production. The result: healthier foliage, better budding and greater tree vigor . . . better yields and profits.

Stauffer CHEMICALS

Use Stauffer Captan in your orchard this year—see the difference it makes! Stauffer Chemical Company, Agricultural Chemical Division, 380 Madison Avenue, New York 17, New York.

Read the label, heed the label and
GROW WITH STAUFFER CHEMICALS

Wisconsin Horticulture

VOL. XLVIII MAY, 1964 NUMBER 12

May in the Orchard

G. C. Klingbeil
Extension Specialist, Fruit Production
University of Wisconsin

Late April and early May weather has been different than that experienced over the same period for the past several years. To an apple grower plenty of wind, rain, high temperature, and humidity mean good scab weather. Growers should tighten their spray schedule and be sure to get good spray coverage. Don't forget the tops of the trees; this is usually where scab first shows up! Most growers around the state completed more than the usual amount of pruning this winter; this will certainly be helpful in getting better spray coverage.

Visible mouse damage is rather low this spring. Possibly the open winter led to above normal mortality of these pesky creatures. It doesn't pay to let down on control measures and those with young trees should protect them with mouse guards as soon as possible.

Full bloom in many areas of the state came fast this year. Many orchards in Southern Wisconsin were in full bloom the 8th and 9th of May. The Gays Mills Area was in bloom with some varieties before that, but the big show on that concentrated 1,000 acres was expected to be May 10. Usually thousands of visitors, camera fans, and Sunday drivers make the pilgrimage to that location on the date designated as "Blossom Sunday." This year the date was May 10.

It's too early to make predictions about the Wisconsin crop at this time, but certainly the bloom is most encouraging. We could, if all goes well, come up with a near record crop. Time will tell. Commercial growers are encouraged to keep a record of full bloom by varieties so that harvest dates can be more accurately predicted.

Minimum Wage Harvesting Strawberries

The Industrial Commission of Wis. has issued the following order of interest to strawberry growers:

That 7 cents per quart shall be the piece rate approved for picking strawberries under the provisions of Order Ind. 72.04, Paragrah 3 as being adequate to comply with the minimum wage rates established by Chapter Ind. 72.

This order shall be in effect during the 1964 Strawberry season.

INDUSTRIAL COMMISSION
OF WISCONSIN

80th Birthday

Prof. George Briggs, Wisconsin's popular and much loved retired extension specialist, celebrated his 80th birthday on May 19th. George is as busy, active, and full of zip as ever. The Briggs clan now numbers an even forty, according to Mary—that's Mrs. George.

"Eighteen grand children and four great grandchildren," she proudly announces. George keeps busy caring for and marketing the apples from his 200 tree orchard, supervising the 35 city gardeners who garden on his place, and attending all Kiwanis, plus as many other meetings as he can work into his busy schedule. George has been a Wisconsin Horticulture member some 35 years and is an avid reader of the magazine.

From all of your many friends, George, "Many Happy Returns of the day."

WISCONSIN HORTICULTURE

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Subscription and Society Membership $2 per year.

Harvey J. Weavers, 4215 Mohawk Drive, Madison, Wis. 53711. Phone Madison 233-3146

Events of Interest to Horticulturists

May 31 — Annual Maple Syrup Festival, Aniwa, Wisconsin.

June 3 — Strawberry Growers' Field Day — 10:00 A. M.— Hipp Berry Farm, Janesville; Pine Bluff Fruit Farm, Brodhead.

July 9 — Horticultural Society Board of Directors' Meeting — Clemens' Orchard, Mequon.

July 21 — Summer Beekeepers' Meeting — Watertown.

July 22 — Summer Beekeepers' Meeting — Eau Claire Lake Park Experiment Station Farm

July 23 — Apple Growers' Machinery Exhibit and Field Day — —Sturgeon Bay, Door Co.

August 10 — Western Wisconsin - Minnesota Apple Growers' Field Day—Gays Mills, Wisconsin

August 12 — Entry Day for Apples — Wis. State Fair.

October 21-22—Annual Convention — State Beekeepers, Madison

November 30 - December 3 — Michigan State Horticultural Society Convention.

December 14 - 15 — Western Wisconsin - Minnesota Fruit Growers' Meeting—Hotel Kahler, Rochester, Minnesota.

Memorial Day, 1964

Springtime in our town is green and fresh and it makes you glad to be alive. The sun slants through the trees, dappling the streets, and the air is sweet.

But at the end of May, Memorial Day brings a pause . . . sad, reflective and more than a little challenging . . . in the life of our town. We remember boys who marched away, bright with laughter. We remember the things that they fought and died for . . . freedom, justice, a good way of life.

So, on Memorial Day we put fresh new flags on their graves in the cemetery. We gather under the old towering trees in the courthouse square to listen to a speech by the mayor.

The boys from the Legion and the VFW posts turn out in uniform . . .a little older this year, a little thicker at the waist . . . and they fire a volley as a wreath is placed on the monument to all the men from our town who died in America's wars.

On the edge of the crowd, very grave and trying hard not to cry, is the young, pretty girl whose sweetheart was killed at a crossroads village in Korea. And a boy in a cowboy suit holds tight to his mother's hand: he never saw his father who died on Omaha Beach in another spring time. Still proud and straight-backed is the faded widow whose boyish husband sailed away in a choke-collared uniform in 1917 and stayed to sleep forever on a French hillside.

Up on the speaker's platform, in the place of honor next to the mayor, is our town's only living veteran of the Spanish-American War. He's frail and old now and his eyes are dim, but they still shine with a vision of the American dream.

We listen thoughtfully to all of the speeches and watch the ceremonies. And afterwards, the high school band parades through town. The kids are gay and full of spirit. They didn't know the owners of those names on the monument.

By late afternoon, the courthouse square is empty. Bits of red, white and blue bunting litter the trampled grass. The wreath at the base of the monument catches the last rays of the setting sun.

And we go home through the gathering dusk with the fresh new leaves nodding overhead. Home at the end of another Memorial Day . . . remembering and resolved.

For our town is tired of war, and so are towns everywhere, no matter who rules them. Mankind has lived too long with violence. In our own generation its victims lie scattered from Stalingrad to the China Sea. It is time now to try to build peace, though we may differ on how to do it.

Let us not be naive; let us face realities. But also let us try to understand other nations and pray that they understand us. Let us resolve to find some way to make at least a little progress towards brotherhood, even in these times.

—Town Journal

New Secretary

The Executive Committee of the Horticultural Society and the Wisconsin Apple Institute report that Harvey J. Weavers, 4215 Mohawk Drive, Madison, Wis. 53711 will take over as secretary of both organizations. Henry Mahr, Oak Creek, who has performed this work so admirably and efficiently for the past several months, insisted that he be relieved of these responsibilities.

Weavers has a background of many years of service in agriculture, teaching, County Extension and Wis. Dept. of Agriculture. The appointment is on a temporary basis. The goal of both organizations is a permanent office with a full time administrative staff.

Weavers will work closely with personnel from both the Wisconsin State Department of Agriculture and the University of Wisconsin College of Agriculture.

Dr. Leuty Joins Horticulture Department Staff

Dr. Stanley J. Leuty has joined the staff of the Department of Horticulture Dr. Leuty will be teaching undergraduate and graduate students and conducting research on tree fruits, especially apples. He will teach the tree fruits course, and his initial researches will deal primarily with physiological aspects of dwarfing. Exploratory studies will also be undertaken on nutritional and other problems of special concern to apple growers, reports O. B. Combs, chairman of the Horticulture Department.

Dr. Leuty grew up near Toronto, Ontario, Canada and received his undergraduate training at the Ontario Agricultural College. He recently completed work for the doctorate degree at Michigan State University. He will be stationed at Madison, and will conduct most of his researches in laboratories or greenhouses at Madison or in newly established apple plantings at the Horticulture Research Farm just north of Madison. As his studies progress, it is anticipated that work which can be appropriately conducted away from Madison will be located on University Experimental Farms or in commercial orchards. He will be traveling about the state to familiarize himself with grower problems, as time permits. He will also be reporting research progress at annual grower meetings.

Renewals, covering membership in the Wis. State Horticultural Society, and subscription to the official magazine, "Wisconsin Horticulture" are due. If you have not already done so, may we suggest that you mail the Secretary your check for $2.00 at an early date.

Active Apple Promotion Program Planned For 1964

Wisconsin apple producers can look forward to an active Apple Promotion Program to aid them in marketing their crop this fall. The Promotion Committee of the Apple Institute reported to the Board of Directors at their recent meeting that a well-rounded program will be followed which, they hope, will help sell Wisconsin apples.

Plans call for declaring and publicizing "Wisconsin Apple Time" September 1 through October 31. During this period a well developed publicity program through radio, TV, and newspapers will be followed calling attention to Wisconsin apples. The committee has solicited the cooperation of several agencies which will also promote apples during this time.

In Madison, a major radio station has consented to carry on an "Apple for the Teacher" program. Each day a "favorite teacher" will be selected for which she will be awarded a sufficient number of apples to treat all the children in her room. The radio station plans to make daily announcements about Wisconsin Apple Time. The Morton salt people plan to cooperate in the program.

Plans also call for development and distribution of point-of-sale material and mats denoting Wisconsin Apple Time to all wholesale-retail outlets in the state. Recipe books and information for food editors will also be available.

For the growers, 30 billboards are still available as well as a bumper strip which could have the grower's name imprinted on the strips. For further information on this program, write to William Meyer at Kickapoo Orchards, Gays Mills, Wisconsin. It is hoped other programs will develop as the season progresses.

The Promotion Committee is composed of William Meyer, Chairman, James Robertson, Walter Frisch, and Howard Erickson.

Horticultural Society & Apple Institute Boards Meet in Joint Session

In response to a directive given at the January board meeting of the Apple Institute, President George Premo of the Apple Institute and President Walter Clemens of the Horticultural Society, called a joint meeting of their respective boards. This meeting was held at Wisconsin Dells in early April.

The purpose of the session was to discuss the future of the two organizations and to investigate ways and means whereby the horticultural interest of Wisconsin might be served to better advantage.

Following a lengthy discussion on the strengths and weaknesses of the present situation, Professor O. B. Combs of the College of Agriculture, University of Wisconsin, was named chairman of a committee to explore the feasibility of developing a single organization and program which might effectively coordinate the objectives and activities of the Wisconsin State Horticultural Society and the Wisconsin Apple Institute. Named to serve with him on this committee were: Walter Clemens, George Premo, Harold Rasmussen, Robert Sacia, Professor G. C. Klingbeil, Arthur

Kurtz, and Marlon Schwier.

Others attending the joint meeting and taking part in the discussion were as follows:

From the Horticulture Board: Frederic Meyer, Armin Barthel, Mrs. Art Basset, and Willard Wagner.

From the Apple Institute: Don Rawlins, Henry Mahr, Walter Frisch, Albert Ten Eyck, Wm. Meyer, James Frostman, Willard Nieman, Ralph Young, and Gerald Hipp.

Prominent Horticulturist Passes On

Fred Sacia, a prominent pioneer Wisconsin apple grower, died at his home in Galesville, Wisconsin on Saturday, April 4. He would have been 91 years old July 15.

Mr. Sacia developed what is now known as one of the finest commercial Delicious apple orchards in the upper Midwest. The 150 acres of 12,000 apple trees are composed predominately of the red strain Delicious which have found extremely good market demand. Mr. Sacia's sons, Robert and Ethan, have operated the orchard since 1945.

Despite Mr. Sacia's age, he continued to be an active participator in the apple industry. He attended most of the area apple meetings and maintained an active interest in the orchard activities. Throughout the years Mr. Sacia received many recognitions. However, his most cherished awards were those bestowed on him by the Wisconsin Horticultural Society, the Distinguished Service and Life Membership award, and just recently the Golden Apple Award presented by the Minnesota Apple Growers Association.

In addition to his two sons who now operate the orchard, Mr. Sacia is survived by another son, Roger, at West

Bend, and a daughter, Mrs. Neil Ballantine of Galesville; 22 grandchildren and 36 great grandchildren.

What Is Horticulture?

O. B. Combs, Chairman
Dept. of Horticulture, University of Wis.

Horticulture consists of those segments of plant science which deal with the improvement, propagation, culture and handling of florist crops; fruits, ornamental trees, shrubs and vines; grasses and other ground covers; and vegetable crops. The study of horticultural plants and the solution of problems involving these plants require a sound knowledge and use of the basic sciences of chemistry, mathematics and physics. Horticulturists must also have considerable knowledge of the several plant sciences such as anatomy, cytogenetics, cytology, ecology, genetics, morphology, physiology, pathology and taxonomy. The modern horticulturist, therefore, must be trained in the fundamental plant sciences and acquainted with the methods, techniques, and equipment currently available to workers in these several plant science disciplines. He is really a botonist, whose concern is the study of several special groups of economic plants. His interest and training will enable him to utilize funamental knowledge of plant science in the solution of problems involved in the improvement, culture and handling of these plants. His major concern is the total plant, and the conditions necessary for its proper development, productivity and use. Members of the Department of Horticulture at the University of Wisconsin are plant scientists who devote their efforts and talents to the education and training of undergraduate and graduate students in the plant sciences as they relate to horticultural plants and to the solution, through mod-

ern research and extension methods and techniques, of problems confronting those who produce these plants for food and decoration.

National Apple Institute's 29th Annual Meeting To Be Held

National Apple Institute, the Apple Growers of America, will meet at the Bedford Springs Hotel in Bedford, Penna., June 28 - July 1 for one of the most informative meetings in its history, according to William H. Darrow, Jr., President, of Putney, Vermont.

Expanding national apple production, agricultural labor, agricultural chemicals and apple marketing will be major areas of interest around which the program has been developed.

Fred P. Corey, Executive Vice President of this national federation of state and regional apple grower organizations, reports that key speakers have been recruited. Among those scheduled will be:

Edwin P. Neilan, President, Bank of Delaware, Immediate Past President of the Chamber of Commerce of the United States on "Agriculture and the Economy in 1970."

Dr. Robert H. White-Stevens, permanent Research and Development man with the American Cyanamid Company, will discuss the increasingly important agricultural issue in his talk on "Science and Hunger."

Floyd Hedlund, Director of the Fruit and Vegetable Division of Agricultural Marketing Service, USDA, will speak to the challenge of "Marketing Apples in a Changing World."

Dr. Max Brunk, Cornell University, who will be the recipient of NAI's first annual award for outstanding contributions to apple marketing, will discuss "The Case For Apple Marketing Research."

Matt Triggs, Assistant Legislative Director for the American Farm Bureau Federation, will tackle increasingly important problem for agriculture . . . "Our Increasing Agricultural Labor Dilemma."

William "Bill" Luce, Yakima, Washington, President of the Washington State Historical Society and American Pomological Society, lifelong pomologist, grower and consultant for the Washington State apple growers, and **Joe Brownlow,** Manager of Washington State Apple Commission will team up to report on the expanding apple industry in Washington State.

The roundtable discussion on "Selling Apples" will be handled by top-rated industry spokesmen from across the country. M. E. Knouse, President of the Knouse Foods Cooperative, and current President of the Processed Apples Institute will talk on "Challenge For Growers and Processors in the Apple Industry."

A fast-moving orchard tour will present a view of one of the very interesting sections of today's apple growing industry.

These and several other equally important features are reasons stressed by Corey for the importance of this 29th annual meeting series in the host state of Pennsylvania, June 28 - July 1.

Details and reservation information are available from the offices of National Apple Institute, 2000 "P" Street, N. W., Washington, D. C. (20036).

Henry Mahr, Oak Creek, Wis., will attend as the official representative of the Wisconsin Apple Institute.

OZARK APPLE CAKE

1 egg
¾ cup sugar
1 tsp. vanilla
¼ cup flour
1 tsp. baking powder
¼ tsp. salt
1 heaping cup peeled, coarsely-chopped apples
½ cup chopped nuts

Beat eggs and sugar and vanilla until light and fluffy. Sift flour, baking powder, and salt. Blend carefully into other

mixture. Fold in chopped apples and nuts. Pour in large pie tin or 8 x 8 square tin. Bake 25 minutes at 350° F. Serve with whipped cream or ice cream.

Wisconsin Plant Improvement —Strawberries

Abraham H. Epstein
Wis. Dept. of Agriculture

1963 was the 10th year of operation of the Wisconsin Plant Improvement Program. Approximately 15 acres of strawberry plants were certified as qualifying for the Green Tag classification (essentially virus free) to be sold in 1964. All plantings were inspected at least two times during the growing season for the presence of insects, diseases and nematodes; and where possible, a third inspection was made at digging time.

Although this past winter was considered to have been a relatively mild one, some injury did occur. The "tender" varieties such as "Earlidawn" were injured considerably on some of the lighter soils and where mulch was blown away. Those plantings which had been liberally watered before freeze-up last fall came through the winter in better shape than plantings which did not receive supplemental irrigation.

The Department of Agriculture has received a number of inquiries from individuals who are interested in producing strawberry plants under the Wisconsin Plant Improvement Program. Following are the requirements which must be met in order to produce plants qualifying for "Green Tag" certification:

1. All plants must be produced from a new stock of foundation plants purchased from Mr. Gilbert Brooks, Plainfield, Wisconsin. Plants which are more than 1 generation (one growing season) removed from Blue Tag (foundation) stock cannot qualify.
2. Virus-free plantings must be isolated by a minimum distance of 300 feet from all nonvirus-free strawberries including wild strawberries.
3. There must be at least one row's width separating varieties.
4. Each varietal block must be labeled using a weather-proof pencil or crayon on a plastic or wooden marking stake one foot high. In addition, the grower shall prepare a planting map showing the location of varieties in his planting. This map will be given to the inspector who will then file it in the office of the Division of Plant Industry.
5. Plantings must be dusted or sprayed at two-week intervals with malathion or parathion. Use a recommended fungicide for control of foliage diseases as needed.

   Records of all weed, insect, and disease control treatments should be kept for the inspector on forms provided by the Department of Agriculture. Record the material used, dosage, and date of application.
6. Plantings must be kept reasonably free of weeds.
7. Plantings must be mulched before temperatures fall to 18° F. for the first time in your area in the fall.

Noncompliance in any of the items listed above will be considered as adequate grounds for refusal of certification.

In several instances these requirements are more stringent than those of other certifying programs operating in other areas; however, with this program, Wisconsin plant growers can assure a very superior product.

Best wishes for another successful year to all of you.

Lawyer: "Now make it brief and to the point. How did the explosion occur?"

Witness: "The engineer was full and the boiler was empty."

THERE IS A BIGGER FOOL than the fellow who knows it all—it's the fellow who argues with him.

The Plant Trade in Wisconsin

S. B. Ferguson, Jr., Horticulturist
Wisconsin Department of Agriculture

The recent surge of construction of office buildings, churches, homes, and schools for which their specifications call for landscape plantings of large sized plant materials has created a demand for nursery stock filled by importing this larger sized stock into the state. This fact, plus differences in growing conditions, land and labor costs in areas east and south of Wisconsin, has put this state's nursery industry at a certain disadvantage in competitively producing items of nursery stock in popular demand.

On the other hand, there are three distinct areas in which Wisconsin's nursery industry has built-in geographical and climatological advantages. The first advantage enables prime producers of coniferous seedlings to ship dormant planting stock from Wisconsin later in the season than those growers in eastern and southern states. Secondly, there has evolved a group of collectors of self-seeded birch and maple trees who draw upon the vast resources of these trees found so abundantly in the state to fill the increasing demand for this type of planting materials. The third advantage is the recently developed sod industry in southeastern Wisconsin. Grown on peat soils, this light weight sod is more economically transported greater distances to markets. In just a few years, the sod industry has nearly equaled the fruit industry in dollar volume of sales and is approaching the value of the state's tobacco crop.

The Plant Industry Division of the Wisconsin Department of Agriculture is charged with the responsibility of protecting the plant life of the state from harmful plant pests. Owing to the importations of plant materials into this

state from other states and countries, the risk of importing a hitchhiking pest on nursery stock or other plant material is high. For this reason, the plant Industry Division systematically ascertains all sources of nursery stock being imported into the state are from officially inspected nurseries. Likewise, plant materials from Wisconsin are inspected by the Division to insure the public that they are purchasing only insect and disease-free stock.

Honey Bee Pollination of Fruit Crops

William C. Lueschow
Wis. Department of Agriculture

Set of fruit and seed is dependent upon pollination. The pollination of farm crops is accomplished by wind as in the case of grain crops and by insects as in the case of legumes, fruits, and many vegetable seed crops.

As agriculture developed and more and more land came under the plow, the nests of wild pollinating insects were destroyed. Heavy grazing of land took a further toll as did elimination of rail fences and hedges. As insecticides became more effective and their use widespread, wild pollinators decreased while crops needing pollination grew by leaps and bounds.

Orchardists were among the first to recognize the need for more adequate pollination to increase the production of fruit. Weather conditions during fruit bloom are often such as to result in a short pollination period. Wild pollination insects often have a low population at this season. Honey bees thus become valuable aids to the orchardist in increasing his fruit production.

Honey bees are rented to pollinate several important fruit crops in Wisconsin. In the Gays Mills apple orchard area, five commercial beekeepers move in approximately 700 colonies of honey bees each spring for pollination. Some of these bees are later taken to cranberry marshes to aid in cranberry fruit set. The Door-Kewaunee County fruit producing area also rents colonies to help fruit set in both apples and cherry orchards. Approximately 1,000 colonies of honey bees are moved into this area each year for fruit pollination.

The going price for colony rental for orchard pollination varies by locality and year. The range may be from five to twelve dollars per colony. In any case, it must be high enough to make colony rentals attractive to the beekeeper. The beekeeper must consider the time, transportation, and possible loss of honey crop when he agrees to a rental price. In some cases his colonies may suffer from the effects of pesticide applications in an orchard.

The orchardist should know the beekeeper with whom he is dealing. Weak, overwintered colonies or those recently established from packages are of little value for pollination. The orchardist is

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usually not in a good position to determine bee colony populations. Since he must depend upon the integrity of the beekeeper, he should deal only with those who have demonstrated their reliability in pollination service.

Wisconsin beekeeping regulations prohibit the movement of bees or used beekeeping equipment without a permit. These permits are issued by the Wisconsin Department of Agriculture after an apiary inspection has ascertained that the colonies in question are free from infectious bee diseases. Permit regulations were adopted statewide to protect the beekeeping industry against the ravages caused by destructive bee diseases.

Scientists Study Honey's Antiseptic Qualities

New Mexico State University Farm, Ranch, and Home News

Honey has been lauded by poets for centuries. Not so long ago it was regarded as a cure-all. To some people heaven is a land of milk and honey.

Maybe honey deserves its poetic and medicinal reputation, suggests Dr. Stanley Coppock, entomologist with the New Mexico State University Extension Service.

He relays news of work done at the University of Arizona which shows that honey has antibacterial action similar to penicilin. Researchers, in a project aided by the U. S. Department of Agriculture, are checking into half a dozen traits credited to honey. They still don't know what it is that stops bacteria, whether the honey actually kills bacteria or simply stops them from growing.

In the test, honey was tested in agar jelly jars. When the jelly was inoculated with bacteria, the microscopic organisms ran wild and in about 15 hours covered the entire culture. But when little dabs of honey were placed on a piece of filter paper, put on the agar jelly, and then the concoction was inoculated with bacteria, quite a different picture was seen.

Re-examined several days later, bacteria had spread over the plate except in a circle around the honey. The effect is much as would be found if the culture were spotted with penicilin or aureomycin.

Coppock says it will take considerable analysis to isolate the bacteria-fighting ability of honey. The experimental honey came from different parts of our country and was based on different flower nectars. Strong doses of all the honey stopped all of the bacteria, but in smaller doses some honey worked better than others.

The scientists believe the anti-bacterial element in honey must depend on geographical or flower sources.

The 4-H boys were visiting their state capital for their annual convention when a girl walked by. She was the finished product — high piled hair-do, blue-tinted eyelids, gaudy lipstick, and silvered nails. One boy stared after her for long minutes:

"Gosh, it looks like it must be mighty poor soil to need so much top-dressing."