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KENTUCKY FRUIT NOTES

W. D. Armstrong, Horticulturist, Editor

FRUIT PLANTINGS

By W. D. Armstrong

The high prices received for all fruit crops this year, including raspberries, strawberries, peaches, grapes, and apples, will undoubtedly be a stimulus toward increased plantings this fall. There will likely be a tendency for inexperienced people to plant new orchards as well as for orchard men to increase their present holdings. The present zeal for "victory fruit production," the desire to help in the all out war effort, and the desire to cash in on possible highpriced fruit will also be factors that would tend to increase plantings. So also will be the high-powered, glowing advertisements of nurseries having trees for sale.

Face the Facts: Every prospective planter should face the facts centered around fruit production. First, trees and fruits in general are not poor-land crops that can be placed on the barren, rough areas of a farm and be expected to succeed. As with other crops, fruits respond to fertile, well-drained, well-cared-for soil. Under present conditions there is no such thing as simply planting trees and then waiting for them to start bearing. Young trees have to be given special and regular care to insure rapid growth and early production. The same is true for blackberries, raspberries, and grapes. Some expect heavy production too quickly from fruit plantings. It should be remembered that strawberries, dewberries, blackberries, and raspberries will produce a crop one year after planting while grapes can be expected to have a fair crop the third year. Peaches generally start bearing from 3 to 5 years of age and apples from 5 to 7.

Orchard Equipment: New growers should realize that it is impossible to produce satisfactory crops of commercial or home orchard fruit without proper spray equipment, and also that during the war it is very difficult, if not almost impossible, to obtain new spray equipment. There are indications that more orchard spray equipment will be manufactured or released, but this is no certainty. Consequently each grower should preserve his equipment to the fullest extent, and each prospective grower should know about this shortage and not expect to be able to get new equipment as desired. Since fruit growing is one of the most complicated agricultural ventures, a thorough understanding of a few basic spray principles is needed, along with a wise interpretation and use of this information.

Adapted Varieties Important: Experience has shown a wise selection of adapted varieties to be one of the most important factors in fruit production. Under the influence of glowing advertisements, inexperienced persons are apt to make very poor selections of varieties for planting. A new grower will profit greatly by getting from the Experiment Station a list of recommended varieties or by seeking the advice of an experienced fruit man in his section. Every catalog carries a great number of varieties, but generally those that are doing well in a given section are comparatively few. Of the peach varieties, Red Bird, Golden Jubilee, Halehaven, South Haven, July Heath, Champion, Georgia Belle, and Elberta, in their order of ripening, are the most outstanding, proven Kentucky peach varieties. Most of these have certain shortcomings. For instance, Red Bird has low quality and is highly subject to brown-rot losses. South Haven and Champion also are subject to brown rot. Halehaven and Georgie Belle, while generally hardy, tend to have small fruit unless the trees are thinned. While the Elberta is still the most

outstanding commercial peach in the United States, it is tender in bud and often fails to bear regularly in many parts of the state. June Elberta, Alton, and Mamie Ross are older varieties that are very hardy, but their fruit is so tender that they are of value only for home or roadside trade. A number of new varieties now under trial give promise of developing into good producers. Some of these are Redhaven, Fairs Beauty, Vedette, Viceroy, Valiant, Veteran, Golden Globe, Sunhigh, Colora, Ambergem, July Elberta, Goldeneast, Kalhaven, and Summercrest. Most of these are yellow free-stone peaches of high quality.

Vedette, Viceroy, Valiant, and Veteran are all yellow-fleshed, high-quality, hardy varieties from Canada that are showing promise in Kentucky, especially Viceroy and Veteran. In recent years Golden Jubilee, Halehaven, and July Heath have won many friends in Kentucky.

Among the apples, Transparent, Polly Eades,* Paducah,* Wealthy, Jonathan,* Golden Delicious,* Grimes,* Stayman, Rome,* and Black Ben* are giving heavy production in commercial plantings over the state. Winesap and Delicious have often failed to produce well because proper pollenizer varieties were not provided at planting time. The starred varieties above are good pollen producers.

Some newer early apple varieties that are showing promise for early production are Wrixparent, Close, Red Bird (Crimson Beauty) and Lodi. Wrixparent, Red Bird and Close ripen slightly ahead of Transparent. Lodi can be harvested with or slightly after the Transparent. Further trial of these apples in Kentucky is suggested.

The present new uses for apples, along with the fact that apple tree numbers are gradually decreasing in Kentucky and other states, indicate that there is room for some well-planned, orderly new plantings. Growers making these plantings should be amply repaid in the future if the work is done properly. Certain services and publications are available from the College of Agriculture to help Kentuckians with their fruit problems. Some of these publications are Circular 347, Planning and Planting an Orchard; Bulletin 396, Grapes and Small Fruit Varieties for Kentucky; Bulletin 394, Tree Fruit Varieties for Kentucky; Bulletin 393, Fruit Pests and Their Control; Circular 295, Commercial Strawberry Production in Kentucky. The quarterly bulletin, Kentucky Fruit Notes, furnishes timely information for the leading fruit crops. Individuals can get on the mailing list for Kentucky Fruit Notes and the spray letters as well as new fruit bulletins, by writing to the College of Agriculture, Lexington, Kentucky.

INSECT DAMAGE TO THE 1943 PEACH CROP

P. O. RITCHER

Insect damage to peaches in Kentucky can be blamed on three pests —curculio, oriental moth, and plant bugs. The first two cause wormy peaches at harvest time while plant bugs are responsible for "cat faces." To find out just how much damage these insects did to the 1943 crop, Mr. Magill, Mr. Armstrong and the writer made a survey in Western Kentucky, early in August, during peach harvest. Fruit from a number of representative orchards was examined and opened, and cull peaches were inspected as they went over the graders. Information was also secured on the spray schedules followed, and an attempt made to determine the reasons for success or failure in control.

Of all the peaches examined, fully a third were injured by insects, some by more than one kind. Curculio damaged 8.2 percent of the crop, oriental moth damaged 14.1 percent, and 12.7 percent were cat-faced. Many of these peaches, because their injury was hard to locate or was slight, found their way into the No. 1 fruit packs. Brown rot, which often follows insect injury, was found on 2.8 percent of the fruit handled. Counts made later in the harvest period would have shown an even higher percentage of oriental moth injury.

Curculio

Curculio injury was least where the spray schedule included a month-before-harvest spray containing lead arsenate (See July Fruit

Notes). Such a spray was recommended as a result of studies of adult curculio emergence and examination of adults jarred from trees in early July. At one orchard near Mayfield peaches averaged 3.3 percent wormy from curculio where the complete schedule was used, and 11 percent wormy where the month-before-harvest spray was omitted. Also, where this spray was omitted, there was about 5 percent brown rot and a peck or so of drop, wormy peaches under each tree.

The worst curculio injury found was in a Paducah orchard. The damage there amounted to 19 percent of the crop, with about a bushel of wormy, ripe drops on the ground under each tree. Much of this damage was thought to be due to this orchard being in sod and reliance on daytime dusting instead of night dusting or spraying.

A second Paducah orchard had surprisingly little curculio injury. In fact, we were unable to find any wormy peaches except on an unsprayed seedling across the fence. This clean crop seemed especially remarkable since a number of jar-rings in late June showed many adult curculios present on the outside rows and early in July many females were found containing developing eggs. The cleanness of this crop is attributed to the use of the complete spray schedule and the careful application of dusts at night.

In a third Paducah orchard there was very little curculio in blocks where a complete schedule of lead arsenate was used. In other blocks, where fixed nicotine was used instead of lead arsenate in the month-before-harvest spray, there was a great deal of curculio and many wormy drops were on the ground.

At Morganfield and at Henderson, curculio damage seemed fairly light. In one Henderson orchard where jarring was practiced to time the sprays, only the shuckfall and the month-before-harvest sprays were applied. Harvest counts showed curculio injury was not over 6 percent. At Lexington there was very little second-brood curculio this year.

Oriental Moth

In general, injury from oriental moth was more severe than that from curculio. The least injury, about 7 percent, occurred in a Henderson orchard where the parasite **Macrocentrus ancylivorus** is well established. In other orchards as high as 22 percent of the crop was injured.

To date the best control measure for oriental moth is the use of parasites. This season we were fortunate in securing 2,000 **Macrocentrus ancylivorus** from the federal oriental moth parasite laboratory of Moorestown, New Jersey. These were released in 8 Western Kentucky orchards where the parasite was absent. If additional parasites can be secured next year, releases will be made in other parts of the state.

Cat Face

Cat-faced peaches were common in all the orchards visited, ranging from 10 to 18.7 percent of the crop. So far, no satisfactory control measures have been devised. It is known that the plant bugs which cause cat facing are more common where legumes are grown and that a larger percentage of the fruit is injured when there is a light crop.

FERTILIZER

By PROF. A. J. OLNEY

The sale and use of commercial fertilizer will continue to be regulated under Food Production Order No. 5 revised for the period July 1, 1943 to June 30, 1944.

The amount of nitrogen fertilizer available to fruit growers is to be increased over last year. While sulfate of ammonia will be reserved for mixed fertilizers, a considerable amount of ammonium nitrate will be released as well as some nitrate of soda and a small amount of calcium cyanamid.

It should be noted that ammonium nitrate contains approximately twice as much nitrogen as nitrate of soda so that growers will need to use only about half as much ammonium nitrate as they are accustomed to use of nitrate of soda.

Ammonium nitrate is a new fertilizer to most growers, and is available now because it is a form of nitrogen that can be diverted from war requirements to better advantage than the more common forms.

In normal times, ammonium nitrate has not been popular with the fertilizer trade because it tends to absorb moisture and cake up on prolonged storage, and this is not so desirable. However, it is an excellent fertilizer and the cost per unit of nitrogen is about the same as that of sulfate of ammonia.

Growers should apply immediately to their fertilizer dealers for the fertilizer they will need for either fall or spring use. Since supplies are available now, it would seem advisable for growers to plan on using fertilizer this fall rather than to wait until spring when the supply may be limited. Fall application has been found to be quite as satisfactory as spring application, and is essential when calcium cyanamid is used.

In any event, growers should not delay their order for nitrogen fertilizer.

THE NATIONAL APPLE INSTITUTE AND THE NATIONAL APPLE PLANNING COMMITTEE

By FRANK STREET

The National Apple Institute was started in 1935 chiefly through the efforts of the American Pomological Society. It is a nation-wide organization of producers and promoters of apples. The purpose is to line up and unify the industry, to study the needs of the industry as to supplies and equipment and to see that the industry gets fair treatment, nationally, in comparison with other industries. A basic objective of the National Apple Institute is to stimulate apple consumption at a price that will give a profitable and fair return to the producer. In general, it might be called a trouble shooter for the apple industry and an apple public relations department, with its finger on the pulse of National developments. A full time office is now maintained in Washington, D. C.

A few of the many important accomplishments of the National Apple Institute are:

1. Some relaxation in arsenic tolerance.
2. A great amount of national publicity pointing out the healthful values of apples in the diet.
3. Issuance of a new apple cook book listing recipes and best uses for various varieties.
4. Encouragement of research on new uses for apples. The development of the new apple syrup by the U. S. Department of Agriculture is one result of such research.
5. Aid in movement to liberalize amount of canning sugar available.
6. Aid in making more fruit production machinery and supplies available.
7. Influence on government purchase of apples in large crop years like 1941.
8. Keeping in touch with national price trends and price control machinery.

The National Apple Institute is financed by donations from its parent organizations, state horticultural societies, apple producing organizations, and individual fruit growers. At one time it was suggested that donations of $1.00 for each 1,000 bushels of apples marketed would adequately support the National Apple Institute. When as much as $250 is given from one state, that state is entitled to have a director on the governing board.

To date, Kentucky, as a state, has made no contributions to the institute, and persons from Kentucky attending the national meetings have put up the $10 registration fee. Since Kentucky apple growers profit from the activities of the National Apple Institute along with growers from other apple-producing states, it seems reasonable that on the basis of $1.00 for every thousand bushels sold, the state quota could be raised speedily and painlessly. Any grower wishing to contribute to this good cause can send his check to Mr. W. W. Magill, Secretary of Kentucky Horticultural Society, Lexington, Kentucky and it will be turned over to the National Organization.

National Apple Planning Committee.—In order to have a small working group that can get together to study the national apple situation and make recommendations for the industry, the National Apple Planning Committee was set up by the National Apple Institute in cooperation with the U. S. Department of Agriculture and State Experiment Stations in apple producing states. The committee is composed of an apple producer from each of the ap-

ple-producing states, and is considered by the War Food Administration and Office of Price Administration as the legal advisory committee of the apple industry.

Since the beginning of the war this committee has been called into session several times to discuss with government agencies such important problems as the size, wise distribution, and use of the national apple crop. Recommendations have been turned in on such vital issues as the National situations in fertilizers, containers, spray machinery and materials, price structures, orderly marketing and processing practices.

The most recent meeting of this committee at Washington with WFA and OPA officials was August 24-26, 1943. The chief problem discussed was that of ceiling prices for apples. This problem proved so knotty that no decision could be reached at the time. Prices and practices for cannery apple diversions were also discussed with good results. The committee reported that the apple industry is not in favor of ceiling prices on apples but that if the government decides one is urgently needed, the industry will cooperate as far as possible if a **fair** ceiling is established.

It was also brought out that this year's national apple crop is the smallest in 20 years. It is estimated at only 93 million bushels against 128 million in 1942 and an 8-year average of 121 million. This small crop has shrunk further because of drouth and heat during late summer in the Midwest and eastern seaboard regions. It will take wise action to divide this small crop up properly between fresh fruit, canning, drying, and juice divisions, and between the military and civilian forces.

EDITOR'S NOTE: Kentucky's very able member of the National Apple Planning Committee is Mr. Frank Street of Henderson, Ky. He attended the recent conferences at Washington and because of his good work there was placed on a small emergency committee of the National Apple Institute. This committee has power to act on price ceiling matters and other war issues for the National Apple Institute. It has been impossible for Mr. Street to attend all the called meetings at Washington, and on those occasions Kentucky was represented by Mr. C. R. McCollom, able young apple grower of Henderson County and grandson of Reverend McCollom, the pioneer apple grower of Henderson County.

SWEET CIDER

By W. W. MAGILL

One of the favorite by-products of apples is sweet cider properly made and preserved. Apple cider may be defined as apple juice just the same as the statement that hamburger may be defined as ground beef, and there is certainly just as much difference in cider as there is in ground beef. Many of us have recollections of cider making day on the farm in the summer and early fall when we went to the orchard and picked up apples from the ground including soil, hornets, wasps, and partly decayed apples, ground them up in the old cider mill and "made cider." Now I would like to compare cider made by the above formula with the hamburger sold in connection with the once popular circus day in the home town.

Varieties to use. During the last decade many of us have visited cider plants operated quite differently from the old time orchard mill, where two or more special selected varieties of sound, ripe apples are washed, ground into particles almost as fine as apple butter, and pressed through sanitary cider cloths, the product immediately cooled in the icebox and offered for sale to the consuming public. May we again compare this splendid drink with some choice cuts of quality beef, ground up while we look on, and then taken home to enjoy at our own table.

In the first place it is impossible to make "quality cider" until apples have reached the stage of maturity that we would call good eating apples. In the second place, no one variety of apples makes "quality" cider. Considering the varieties raised in Kentucky, in my opinion the Golden Delicious will come the nearest to making good cider with Stayman or Winesap the second choice when used alone. For an "A number 1" blend, use one-third of the apples either Grimes Golden or Golden Delicious, one-third either Stayman or Winesap, and you can use most any other variety or varieties for the rest of the blend. Red Delicious alone used for cider, makes

very poor cider, for the product is too sweet, too thick, and lacks something that is added by blending them with a thin juice apple like a Jonathan, Winesap, or Stayman.

Quick cooling. When cider is pressed during hot weather in September and early October, when the apples are hot—probably from 75 to 90 degrees—natural fermentation starts within a relatively few hours, even to the extent that bubbles are rising in the cider by the next morning, and the mild, sweet cider aroma and flavor rapidly disappears. If, however, the cider is stored in the icebox and cooled to a temperature of 50 degrees, natural fermentation is delayed several days. Cider made from hot apples is in this respect like milk as it comes from the cow, if cooled immediately and kept cool the milk remains sweet several days, but if not cooled immediately it sours before the next milking.

A few of our orchard men have home cold-storage equipment in which the cider can be immediately cooled down to 35 degrees temperature and thus held for several weeks. Where storage facilities are not available, the average man can take advantage of the cool nights in October for cooling the apples before they are crushed, then making the cider during early morning. Most fruit growers find it desirable to press the cider at least twice each week during October and early November and probably at weekly or ten-day intervals through November and December.

Packing for storage. Some of our larger orchards in adjoining states are equipped with modern devices for clarifying and pasteurizing cider, so that it can be packed in gallon jugs, kept indefinitely, and trucked to the various markets, thus utilizing the cider trade for thousands of bushels of sound, mature apples of the "c grade" type. Others treat the cider with some preservative, for example, a one-tenth of one percent solution of benzoate of soda. I have sampled cider from many retail stores packed by many orchards, and my own conclusion is that the quality of the cider kept in storage does not compare with that of the freshly made cider. True enough, when cider is made from reasonably mature apples and not filtered there will be at the bottom of the jug a certain amount of sediment which is nothing more than fine particles of apple pomace. Rather than apologize to the customers for this sediment, why not paste a little printed label on the jug saying, "Keep in your refrigerator and shake before using." This shaking will add to the flavor of the cider just the same as stirring a glass of lemonade adds to the flavor of the lemonade.

Sales outlets. The last half of October, November, and December are the ideal months for selling good cider, and the peak so far as volume of trade is concerned is probably the week before and including Halloween. Practically every church organization, all school organizations, civic clubs, bridge clubs, and other public gatherings offer potential sales outlets for quality cider. The quality of your product has more to do with the amount you sell than has the price of the product. Cider should be served very cold, but when ice is used to cool the juice, the ice water dilutes the cider and spoils the flavor. Suggest to your customer that they make cider cubes in the electric refrigerator and serve one or two of these cider cubes in each glass. Also, suggest that ginger bread be served with the cider. This combination of refreshments will "go over big" even at the most "ritzy" bridge club.

Cider containers. Used screw-top 1 gallon glass jugs are quite satisfactory market containers for cider. They can often be contracted for in advance of the season from some near-by cold-drink bottling factory at prices of 5 to 8 cents each in lots of 100 and up. Such factories usually wash the jugs promptly when the syrup is used, sterilize them with steam and thus they are ready to use for cider without special washing.

Some orchards exchange jugs with the customer buying the cider, but in so doing you are likely to accept jugs that have been used for kerosene, oil, formaldehyde, etc., and it is next to impossible to wash such a jug sufficiently clean to prevent the cider from absorbing the odor and flavor.

Preserving cider for home use. Realizing that cider is an excellent drink throughout the year, and that it contains the same necessary vitamins that we find in tomato, orange, and grapefruit juice, many families have established the custom of processing several gallons for home use

throughout the year. Such cider is not quite so good as the fresh cider, but still is a mighty fine drink. Pint or quart bottles with screw tops, or pint or quart standard fruit jars make ideal containers. The method is simple. During late October or November when the quality of apples is at the best, simply place a few gallons of the fresh juice in an open kettle; bring it to a "simmer" over a slow fire without boiling, and hold at this temperature for about 25 minutes, gradually removing the scum as it comes to the top. In the meantime have your washed bottles or cans in a hot oven for sterilization, then pour the hot cider into the hot bottles. Naturally, you will not want to put the bottle or can tops in the oven, but instead have them in boiling water. As soon as the bottles are filled, take the caps from the boiling water, put two or three drops of melted paraffin in the caps and screw on tightly.

SUMMER ORCHARD FIELD MEETINGS

By W. W. MAGILL

Three orchard field meetings in Western, Central, and Eastern Kentucky were held during July and August, as follows:

July 7, in Graves county at the D. W. Doran orchards. The full crop of peaches on this farm and many others in Western Kentucky again called to attention that our peach growers were among the "favored few" in 1943 south of the Mason-Dixon Line who harvested a crop of peaches during a year when the commercial peach crop in Georgia, North Carolina, South Carolina, to Virginia was extremely short. The apple crop in the Doran orchard was also above par.

W. D. Armstrong gave a timely discussion of Spray Service Work, and Dr. Paul Ritcher discussed oriental moth control with parasites. The spray program for both the apple and peach growers of the Purchase district as a whole has given quite satisfactory results this year.

Growers from 12 Western Kentucky counties and from Southern Illinois and Tennessee attended this field meeting. W. W. Magill led a discussion of harvesting, grading, and marketing the 1943 peach and apple crop.

August 12, in Trimble county at the Joe Bray and Sons fruit farm, growers from 6 counties were pleased to look over a diversified fruit production farm program including a good crop of peaches, apples, grapes, and melons. Naturally the strawberry and raspberry crop had already been harvested. Peach harvest was in full swing and many cars and trucks were waiting their turn in line to buy peaches at prices ranging from $4 to $6 a bushel, and grapes at $1 a peck, with most of the sales being made direct to the consumer. A visit to the Bray roadside fruit market on route U. S. 42 near Bedford, Kentucky, about 40 miles from Louisville and 60 miles from Cincinnati is a day well spent for any fruit grower. Again Armstrong, Ritcher, and Magill led timely discussions with the visiting growers on insect, disease, orchard management of marketing problems.

August 24, in Johnson county. In Eastern Kentucky near Paintsville an all-day field meeting was held at the Ronald Harris and Jasper Slone orchards. These men have successfully developed small commercial orchards that are paying excellent dividends, and are applying modern orchard practices in the mountains. Rome Beauty, Golden Delicious, and Black Ben are the money-making varieties, together with Red Delicious and Jonathan. Their trees are carrying bumper crops of apples that will pick 90 percent U. S. No. 1 fruit. One mature Rome tree on the Harris orchard yielded 52 bushels of fruit last year and the owner estimates the crop this year at 42 bushels. More than 35 sapling poles were used on this one tree to help support the heavy-laden branches of luscious fruit. Two liberal applications per year of nitrogen fertilizer per tree are applied and a very complete spray program is used each year. W. D. Armstrong and W. W. Magill led discussions on fruit production and marketing. Since the orchard men of this county also feature modern poultry production as a cash side line, C. E. Harris, poultry field agent of the College of Agriculture, attended the meeting and gave a very timely discussion of producing poultry and eggs during the war food emergency. During the noon hour the 45 visitors enjoyed a

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bountiful dinner of fried chicken "n-everything" provided by the good wives and families of the local fruit growers.

HINTS AND OBSERVATIONS

By W. W. MAGILL
Field Agent in Horticulture

Orchard Fire

This week I received a letter saying, "My 5-year old apple orchard is in lespedeza — dry weather has caused it to mature early. Some boys enroute to a swimming hole apparently dropped a lighted cigarette. Fire swept 250 fine trees—a neighbor with his tractor disc stopped the fire in time to save the other 250 trees." May I suggest you "play safe" rather than "be sorry." Take your disc at once—before the fire breaks out in **your** orchard—and make a fire barrier between the outside row and the fence, and also in checker-board fashion over the whole orchard.

Orchard Mice

Orchard mouse injury is too widespread. Injury is too often unnoticed because it is at or below the ground line. Search for underground tunnels and surface runways. Spread mouse poison in fall or early winter. If not available elsewhere, a special mouse poison can be had at cost by writing the College of Agriculture, Lexington, Ky.

Strawberry Mulch

Now is the time to distribute and burst bales of straw about the field; so the fall rains will wet it and germinate the wheat and other seeds before time to spread the mulch. **Take advantage of gains to be had by early winter mulching.**