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KENTUCKY FRUIT NOTES

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GENERAL ASSEMBLY ENACTS STRAWBERRY MARKING AND LABELING LAW.

The General Assembly at the last session enacted a strawberry marking and labeling law which commands the attention of all strawberry growers and shippers in Kentucky.

The law provides that every package containing strawberries grown in Kentucky, before it is offered for sale, shall be stamped with the name and address of the packer or the person by whose authority the strawberries were packed.

Every package must also bear the brand, mark, or grade of the berries and such marks must be in letters and figures of one-half inch size or larger.

A person may sell his berries on U. S. grades, on private grades, or ungraded. When the strawberries are not sold on U. S. grades, the package must be marked "unclassified".

Growers are exempt from the provisions of the law when selling strawberries direct to consumers or when selling direct to a manufacturer for preserving, cold pack, or quick freeze.

The director of the Kentucky Agricultural Experiment Station at Lexington is designated as administrator of the law. The law became effective when signed by Governor Johnson and it applies to the 1940 strawberry crop. No appropriation was provided by the General Assembly to administer the act. Unless some funds are made available for the purpose the Experiment Station will be unable to carry out the provisions of the law.

Plans are being made by the Agricultural Experiment Station and the U. S. Agricultural Marketing Service to provide shipping-point inspection of strawberries where the service is requested by shippers. This service will be valuable for growers and shippers who wish to market strawberries on the basis of U. S. Grades.

Growers who plan to sell their strawberries on federal grades and who do not have them inspected by the federal-state inspection service should be certain that their fruit meets the specifications of the federal grades; otherwise, they will be violating the marking and labeling act. To familiarize growers and packers with the U. S. federal grades, standards, and terms these are being printed below.

UNITED STATES GRADES AND STANDARDS

"U. S. No. 1" shall consist of strawberries of one variety, with the cap (calyx) attached, which are firm, not overripe, underripe, or undeveloped, and are free from mold or decay and from damage caused by dirt, moisture, foreign matter, disease, insects, or mechanical or other means. Unless otherwise specified, the minimum size shall be not less than three-quarters of an inch in diameter.

In order to allow for variations, other than size, incident to proper grading and handling, not more than 10 percent by volume, of the berries in any lot may be below the requirements of this grade, but not to exceed one-half of this tolerance, or 5 percent shall be allowed for defects causing serious damage, and not more

than one-fifth of this amount, or one percent, shall be allowed for decay. Not more than 5 percent, by volume, of the berries in any lot, may be below the specified minimum size.

"U. S. No. 2" shall consist of strawberries which are free from decay and from serious damage caused by disease, insects, mechanical or other means. Unless otherwise specified the minimum size shall be not less than five-eights of an inch in diameter.

In order to allow for variations other than size incident to proper grading and handling not more than a total of 10 percent, by volume, of the berries in any lot shall be allowed for defects causing serious damage but not to exceed three-tenths of this amount, or 3 percent, shall be allowed for berries affected by decay. Not more than 5 percent, by volume, of the berries in any lot may be below the specified minimum size.

"Unclassified" shall consist of strawberries which are not graded in conformity with either of the foregoing grades.

DEFINITION OF TERMS

"Overripe" means dead ripe, becoming soft, a condition unfit for shipment and necessitating immediate consumption.

"Underripe" means so immature that less than two-thirds of the surface of the berry is of a pink or red color.

"Undeveloped" means not having attained a normal shape and development owing to frost injury, lack of pollination, insect injured, or other causes. "Button berries" are the most common type of this condition.

"Damage" means any injury from the causes mentioned which materially affects the appearance, edibility, or shipping quality.

"Serious damage" means that the strawberries are soft, badly deformed, badly bruised, leaky, or otherwise seriously injured. Strawberries which are caked with dirt or which show no pink or red color shall be considered seriously damaged.

"Diameter" means the greatest dimension at right angles to a straight line running from the stem to the apex.

SOME FACTORS IN THE PRODUCTION OF BLAKEMORE STRAWBERRIES

Many strawberry growers in western Kentucky have found the growing of the Blakemore variety very profitable on certain years. Some of its chief strong points are its earliness, its unexcelled carrying quality, its drouth resistance and ability to make a stand of runner plants when other varieties often fail, and the ability to make good yields. Some of its weak points are: its susceptibility to the yellows disease, its habit of producing smaller berries toward the end of the season, and its habit of blooming early, which causes it to suffer from late frosts in certain years. Its advantages apparently outweigh its drawbacks for in the ten years since it was introduced it has become the most widely grown variety in the United States. It is replacing the Premier in Maryland, has replaced the Missionary and Klondyke in North Carolina, and has replaced the Klondyke in Tennessee. It is the leading variety in southern Illinois and is gaining popularity in western Kentucky.

When any section starts growing larger acreages of a newer variety it often takes a number of years of study to find out the most proftable cultural practices to be used on the newer variety. This is certainly true with the Blakemore. This variety was developed in 1923 by crossing the Premier with the Missionary variety. The variety was released for trial in 1930. There were a number of problems to be worked out with this variety. These were studied by Dr. G. M. Darrow, who is in charge

of the strawberry work of the U. S. Department of Agriculture, in cooperation with Mr. Charles Dearing of the North Carolina Department of Agriculture. As a result of this work a bulletin was published in 1934 which carries the title of "The Culture and Handling of the Blakemore Strawberry" by the North Carolina Department of Agriculture, Raleigh, North Carolina. This bulletin points out many interesting facts about the Blakemore variety, and can be studied with profit by those growing this variety.

It was pointed out that the chief reason the Blakemore produced so many small berries was because it formed so many plants which resulted in an over crowded condition. These over crowded plants were weak and produced poor yields of small berries. This was the general condition where plants were allowed to develop in the usual matted row system. It was also found that when the number of runner plants was restricted that the yield and size of the berries were increased tremendously. In one test the matted row berries produced 97 crates per acre while the rows that had been thinned and on which the late runners had been prevented from rooting produced 208 crates per acre. The size of the berries from the thinned row was larger than those from the matted row; as there were only 116 berries per quart on the thinned area while in the matted row area it took 180 to fill a quart cup. The thick matted rows produced both smaller yields and smaller berries than the spaced rows, and on a basis of market grades it was figured that the spaced rows produced fruit valued at $332.00 per acre more than the fruit produced by the unthinned rows. This difference in total acre income would many times pay for the extra labor which was needed to thin and space the plants through the season.

This increase in yield from thinning Blakemore plants has also been obtained in other sections and it indicates the reponse this variety makes when the plants are not allowed to become overcrowded. This would seem to offer big possibilities for the Bleakemore grower who wants to get the largest possible yield from a small planting.

More recently, thinning work is being done by the use of spike tooth harrows and hay rakes and it is thought that a workable system can be worked out in the near future.

The yellows problem is being solved by the use of yellows-free plants and many growers are finding it profitable to divide their acreage between the Aroma and the Blakemore.

OBSERVATIONS ON THE CATSKILL STRAWBERRY

Catskill, a new berry, which has been giving unusually high yields in first year tests at the Kentucky Experiment Station, Lexington, has caused considerable interest among growers.

A planting of several acres of this variety was made last spring in the Paducah section. The plants made a fine start in the early season but when the late summer drouth set in, practically all of the plants, old and young, died. This variety came through the drouth in that section in much worse shape than the Aroma or Blakemore.

This incident points out the importance of extensive trials before large acreage of new varieties are set in a district.

It is reported, however, that this variety is doing well in the Covington and Louisville areas. It might work out that this variety is better suited to northern Kentucky conditions than to southern and western Kentucky conditions. Small trials of this variety over the state are being watched with interest.

It is also pointed out again that varieties well adapted to central

Kentucky are often poorly adapted to western Kentucky and vice versa. Such a case is that of the Aroma which is the leading variety in western Kentucky, yet the variety is so poorly adapted in central Kentucky in the vicinity of Lexington that it is a failure there.

At Bedford, in Trimble county, Mr. Terrell Bray reports that in 1939 the Catskill was too soft to be a satisfactory berry with him.

Reworking Observation: It has been reported by several growers and fruit workers in Kentucky and adjoining states that the heavy yields produced by Catskill the first picking season cannot be expected the second year. It has been reported that the variety does not respond well to reworking and that the failure of this variety to make a satisfactory yield the second season is keeping it from spreading in popularity in some sections. Dr. A. S. Colby of Illinois also reported that this variety suffered badly from the red stele root disease in sections of Illinois affected by this disease.

Growers should keep the above report in mind when harvesting their first and second year crops of Catskills in order to see if this second year light crop is generally the case and they should make other observations on the variety as to size of fruit, smoothness, firmness, and quality in comparison with other standard varieties in the same section.

RENEWING THE STRAWBERRY FIELD

Like most other practices in regard to strawberry growing the problem of renewing the one-year old patches is carried out in a good many different ways by different growers. This renewing problem is as old as strawberry growing but an inspection trip through any Kentucky section after harvest will show that there are many methods in use ranging all the way from severe renovation to no renewing at all.

In a normal season where there is a fairly heavy stand of first year plants a thoro renewing carried out soon after harvest usually pays good dividends. If a patch is to be renewed early enough for a good row of runner plants to become established, it is just as important to work the old patch as soon as possible after harvest as it is to set the young patch as early as possible in the spring. Years of experience and study have shown that the earlier formed runner plants are deeper rooted and are the most productive plants the following spring. The field that is reworked immediately after harvest naturally has a better opportunity to form earlier runner plants than one that is not reworked until July or August.

Many growers follow the practice of "giving their patches to their pickers" after the commercial picking season is over, and leave their patch untouched for two or three weeks after harvest in order to allow their own families and those of the pickers to get what berries they need for canning and preserving. This is a fine personal service but is very expensive from the berry growers' standpoint; because the longer the patch is left after harvest without reworking, the smaller the yields are the following season. It would seem much more economical to leave a small portion of the field for this late picking and renew the remainder.

If commercial harvesting is finished at noon, one o'clock of the same day is not too soon to start some of the regular farm crew along with some of the pickers that are still on hand, in on the operation of renewing the plantings. There is generally moisture enough on hand for the soil to work well at that time and the rows can be narrowed, an application of fertilizer made and the middles thoroughly worked and culti-

vated with various tools to work the soil back against the shoulders and to dislodge the old plants that have been plowed out. This provides a good rooting area for new plants and if only strong, healthy young plants are left at renewing time, a satisfactory stand of runner plants can usually be expected.

If the renewing practices are delayed until early July, or later, the soil is often dry and hard and with a larger growth of weeds and strawberry plants that will have to be turned under, it is generally more difficult to work up the clods and prepare a rooting bed for new plants. Also many of the young runners which have put out after harvest are destroyed by this late working and the patch cannot develop a good production condition.

Many growers follow the custom of not reworking their one-year old patches after the first harvest and simply let them go and mow them off one or two times during the summer to keep down excess weed growth. This is a cheap way to handle the two-year patch and while the cost of this patch is very light its production is also usually very light and the return per acre is far less than if more vigorous methods had been used.

Dr. A. S. Colby, of Illinois, speaking before the Kentucky State Horticultural Society at Lexington in February, 1940, stated that Illinois growers did not expect and did not get satisfactory yields on their two-year fields where some type of renewing was not followed. He pointed out that unless the old rows were renewed and the plants thinned out that there was very little space available for new runner plants to become established, and as a result very few of them were generally developed. This condition caused the second year crop to be borne chiefly on the old two-year old plants and it was pointed out that these seldom form large healthy fruit buds nor produce as good quality fruit as healthy young plants do.

In connection with drouths, the old unworked fields have more plants to support than the reworked fields and while many of these old fields came through the summer and fall of 1939 apparently in better shape than young plantings, it remains to be seen the type of yields that will be produced in 1940.

As a method of getting at this problem in a commercial way, it is suggested that a number of growers renew at least a part of their fields as soon as possible after harvest this year and compare this portion with another part that was reworked three weeks to a month later and compare these in turn with a third portion that was not reworked at all.

WANTED—RECORDS FROM "500 STRAWBERRY GROWERS"

W. W. MAGILL

In the August-September 1939 issue of Kentucky Fruit Notes a call was made for 500 strawberry growers to cooperate in making fertilizer tests in their berry fields. To be sure 500 recruits were not obtained; or at least have not reported as yet. However, a sizeable number in six counties have reported that they have staked off such plots and several growers have been assisted in this by their county agent and the writer. It is safe to say that a great many more growers have staked out trial plots, applied fertilizer, and are watching them closely.

In order for the project to be of greatest value to the grower, and to the berry industry in Kentucky careful harvest records should be kept. A form for such a record is given below. Fill one out for each set of rows that has been staked off and treated. Keep a copy of this record and take a copy to your county agent who will send it directly to me.

STRAWBERRY FERTILIZER DEMONSTRATION PLOT RECORD

Treatment 50-Yard Row	Harvest Date May?		Add Columns for Each Picking	Total	
	Qts. No. 1	Qts. Culls		Qts. No. 1	Culls
Check					
5 lbs. 20% phosphate					
10 lbs. 20% phosphate					
5 lbs. phosphate 2 lbs. nitrate or sulphate					
2 lbs. nitrate or sulphate					
Check					

Such a record can be drawn off on a card board with other columns being added for each picking date, etc.

This record will mean more to the farm where it is obtained than any other place. However, we plan to assemble these records from the various counties and publish the results in Kentucky Fruit Notes.

I plan to visit as many of these field demonstration plots as possible during harvest, and the county agents pledge their support in making observations during harvest and assisting the growers in keeping their picking records.

WINTER INJURED PEACH TREES—PRUNING SUGGESTIONS

The sub zero temprature of January killed the 1940 peach crop throughout Kentucky with the exception of the Paducah district. Most peach orchards around Paducah, Mayfield, Clinton, and Hickman still have sufficient live buds to produce a crop this year. Unofficial reports indicate a few crops remain in Eastern Kentucky around Paintsville, Pikeville, and Flemingsburg.

Even the most hardy varieties to winter injury at the Experiment Station orchard in Lexington had all blossoms killed. This includes the Canadian Varieties, Halehaven, South Haven, Belle of Georgia, Hardee, Polly, July Heath, Carman, etc. The official temperatures reported by the Lexington U. S. Weather Bureau were as follows—January 6, 4 below zero; January 18, —3; January 19, —12; January 23, —3; January 24, —7. The snow which fell at Christmas together with the additional snow kept the ground completely covered several inches deep until after February 10. At Lexington records from Maximum-Minimum Thermometer in the Station orchard showed the tem-

peratures in the orchards were a few degrees colder than the official Weather Bureau records.

The examination of twigs and branches on peaches around Lexington, Covington, Louisville, Henderson, Princeton, and Bowling Green indicates less permanent injury to the tree than was expected two months ago. Peach growers, however, have been advised to delay their pruning until new growth starts. This will be after April 15 to 20 and if the cold weather continues, somewhat later. Anytime during May will be a good time to do the pruning.

Dehorning vs. Cutting Back into 2 and 3 year old wood. The general age and vigor of the individual orchard will largely determine the extent of pruning desirable. A majority of the growers I have visited the past two months do not plan to dehorn their trees, but instead will cut back into two and three year old wood, leaving the general framework of the tree, and thus develop new fruiting wood along the main scaffold branches. In all cases, the best place to make a pruning cut is just a couple of inches above the area where a new growth shoot is starting out.

Whitewashing trunks of Dehorned trees. To prevent sun scald on dehorned or cut back peach trees paint the top surface of the exposed scaffold branches with a home made mixture prepared as follows—To 1 gallon of sweet Skimmed Milk, add 2 ounces of Linseed Oil and sufficient hydrated lime to make a medium thick paint. Apply with a common paint or whitewash brush. You will be surprised how long it will protect your peach tree trunk and branches from sun scald.

BORDEAUX TREE PAINT

Many Indiana growers have been making up Bordeaux paint and have reported very favorably on it, while others have had difficulty in preparing it. They report that some brands of prepared Bordeaux work well and others do not. The difference seems to be in the type of filler and the volume of Bordeaux used. Most growers have had satisfactory results with Corona and Orchard Brand Bordeaux. The formula more often used is 3 pounds of Bordeaux to each quart of linseed oil. The dry Bordeaux powder is sifted slowly into the oil with constant and thorough stirring. Not over a gallon of oil should be used at one time. It will seem at first that 12 pounds of Bordeaux in each gallon of oil makes up a mixture entirely too stiff to be applied with an ordinary paint brush, but after the paint stands for several weeks, it thins out. When allowed to stand for several months before using, the consistency of the paint is much improved.

If the paint is made up too thin, the oil seems to sink into the wood and leaves entirely too thin a paint film over the wound. On the other hand, the paint must be made up with a higher percentage of oil when used in cold weather. The consistency of Bordeaux paint must be varied somewhat to suit the weather during which it is being used, and this of course is also true of other tree paints, although to a lesser degree.

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NEW FRUIT PUBLICATIONS

There are three New Kentucky Fruit publications that have not been previously announced in this bulletin. They are all three of great importance in different phases of fruit culture. Circular 347, Planning and Planting an Orchard by Professor A. J. Olney, head of the Horticultural Department, gives a clear and concise discussion of the important problems in establishing a new orchard. Information is given on the selection of orchard sites and soils, the selection of varieties for the home and commercial orchards; directions are given for spacing, setting, labeling, and for the early cultural practices, spray-

ing and pruning. This circular is a valuable addition to those available from the College of Agriculture and will be of great benefit to those contemplating setting an orchard. It will give the prospective orchard man a look at some of the responsibility he assumes when he decides to "put out an orchard".

The other two publications are issued jointly by the Departments of Horticulture, Plant Pathology, and Entomology. The most recent is the new "1940 Apple Spraying Program" which gives concise information of the usual dormant sprays for both apples and peaches and sets forth apple spray schedules for both the commercial and home orchards. Every fruit grower should have one of these to aid him with his 1940 crop. Concise information is given on diseases and insects to be controlled along with control measures. The other bulletin, Number 393—Fruit Pests and Their Control, lists and discusses all of the major Kentucky fruit insects and diseases and sets forth Control Measures. Spray schedules are given for both tree fruits and small fruits and information is given on the various spray materials and spray mixtures. This bulletin will be of great value and can be studied with profit by every fruit grower. This is a large bulletin of 60 pages and should be kept as a reference.

Each of these publications can be had by request from the College of Agriculture, Lexington, or from your County Agent.

ORCHARD CLEAN-UP

Apple growers who have a codling moth problem are reminded of the benefits to be had from orchard sanitation. Old baskets, crates, and boxes in which wormy fruit was handled or stored in 1939 should be placed in a tight room, basement, or screened packing shed where it will be impossible for the adult moths to escape to the orchards when they emerge.

Last fall in a Henderson orchard a bushel basket in which wormy apples had been kept for two nights was taken apart bit by bit. It was found that thirty-three codling moths and two oriental moth worms had spun up under the rims and between the slats.

This condition is not unusual where baskets and crates are used over and over to handle all types of fruit in the course of harvest operations.

Old boards, fertilizer sacks, spray bags, and other objects scattered over the orchard are also favorite places for worms to web up.

It is under the rough bark scales on the old apple tree, however, that most worms over-winter. Scraping the trees of this rough bark is one of the best ways to destroy these worms. A canvas should be placed about the base of the tree to catch the bark and worms as they fall. This material should then be burned.

Each worm that is killed during the winter will tend to make the summer spray problems lighter.