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(Revised)

Small-Fruit Project
for 4-H Clubs



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Small-Fruit Project for 4-H Clubs

By W. W. MAGILL

OBJECTS OF THE PROJECT

1. To raise the best varieties of strawberries, raspberries or other small fruits, and to demonstrate their worth as cash crops.
2. To teach the best methods of producing and marketing small fruits in Kentucky.
3. To stimulate the interest of boys and girls in country life.

REQUIREMENTS

1. Both boys and girls are eligible for this project; age limits, 10-18 years, inclusive.
2. Each member shall grow a plot of 1/10 acre or more of berries. A quarter of an acre is recommended.
3. The member shall make a study of the small fruits which he is growing.
4. Each member, if called upon, shall exhibit at least a quart of berries at a county or district fair, or at a local club show.
5. Each member shall write a story of his project in his record book.
6. At the close of the project the record book and story must be forwarded to the county agent or home demonstration agent.
7. Basis of awards:

Yield	30 points
Income above cost.....	30 points
Exhibit	20 points
Story	20 points

Members under 14 may have help with the heaviest part of the work. Charges for such labor must be made in the record book.

This circular is published especially for boys and girls who wish to grow small fruits. It is planned to help them carry on the work connected with their projects. If more information is desired it may be found in bulletins listed at the end of this publication.

STRAWBERRIES

Soils and Fertilizers. Strawberries succeed on a variety of soils. Loams which are well supplied with organic matter are preferred. Usually strawberries do best following tobacco or other cultivated crops. Sod land should be avoided because it may harbor plant lice, cutworms and the white grub.

Most soils are improved by stable manure applied at the rate of a half-ton to 1,000 square feet, supplemented by 15 pounds of superphosphate. However, garden soils which have been manured regularly for several years may be so rich that top growth is made at the expense of fruitfulness. Such soils are benefited by an application of superphosphate.

Plants. Large, vigorous plants which have not borne fruit should be used. The surest way to get good plants is to raise them. A row 10 feet long should furnish about 200 plants from runners, for setting a year later. Some varieties produce more runner plants than others.

Care of Plants. If plants are purchased from a nursery they should be set at once or "heeled in" until the planting can be done. Heeling in is done by opening the bundles, placing the plants in a thin row in a shallow furrow and covering the roots with moist soil, pressing it firmly about them. If the plants seem dry, water the roots on opening the bundles.

Planting. The best time for setting strawberry plants is as early in the spring as the soil can be worked. It is seldom possible to get a good stand when planting is done in the late spring. Usually the matted row system of planting is preferred. Most growers make the rows four feet apart, and set the plants 24 inches apart in the row. At this distance about 1,400 plants are required for $\frac{1}{4}$ acre. Care should be taken to set the plants at the same depth they grew originally. If the soil is in good condition and pressed firmly around the roots when the plants are set, watering will not be necessary. All plants which fail to grow should be replaced immediately.

Varieties. Many varieties of strawberries are listed in nursery catalogs, but only two are widely grown in Kentucky, Aroma and Premier.

Cultivation. Cultivation should begin soon after the plants are set and continue at ten-day intervals until about the middle of August. If horse-drawn tools are used, the amount of hand hoeing needed to keep out the weeds will be greatly reduced. No cultivation is done in the spring before harvest.

Mulching. A mulch of straw applied in late fall is beneficial. The mulch prevents heaving of the plants caused by alternate freezing and thawing, keeps the berries clean during the ripening period the following spring and conserves soil moisture during dry weather. About one ton of straw is needed to the acre, or two bales for a tenth acre.

Age of patch. The finest berries are borne in the first crop after the plants are set. For this reason some prefer to set a new patch each year and plow it up as soon as the crop is picked. However, many growers harvest two or three crops from one planting. Profitable renewal of the patch depends on the stand of plants and the freedom from weeds.

Harvesting. Do not allow the berries to become overripe. They should be pink all over when picked for sale. Pick every other day, ordinarily. During rainy weather, pick every day, if possible.

Yields and Returns. The 24-quart crate is the common

marketing container for Kentucky strawberries. A hundred crates per acre is a fair yield. However, yields of 200 crates per acre are not exceptional. As a rule the larger the yield per acre the larger the profit.

Marketing. Carefully graded berries sell best. It is advisable to become a member of a nearby cooperative marketing organization. Strawberries are perishable and must be marketed within 24 hours after they are picked.

Care of the Patch After Harvest. Immediately after the harvesting season is over, cultivation should be started again. The rows should be narrowed to about 8 inches, and given a side dressing of sulfate of ammonia or nitrate of soda, at the rate of about 20 pounds for $\frac{1}{10}$ acre or 50 pounds for $\frac{1}{4}$ acre. This is about one pound to 50 feet of row.

RASPBERRIES

Soil and fertilization. A deep, fertile soil, rich in humus, and well drained, is best for raspberries. Usually choice tobacco land is good raspberry land. The natural habitat of the raspberry is near wood lots and old fence corners. It grows best where there is a thick mulch of rotted leaves. In such places one finds plants with large, thrifty canes which produce heavy crops in spite of dry weather at harvest time. A liberal application of manure each year helps to provide these favorable conditions in the field. Annual side dressing of 20 pounds of nitrate of soda or sulfate of ammonia for $\frac{1}{10}$ acre is beneficial on most soils.

Varieties. The following varieties are recommended.

BLACK: The Cumberland.

RED: The Latham.

Planting and cultivation. Altho raspberries may be set in the late fall, most growers prefer to plant them in the early spring before growth starts. The blacks should be set 3 feet apart, in rows 6 feet apart. The reds may be set the same as blacks, to form a hedge row, but planting in hills 6x6 feet, with two plants per hill, usually is preferred. For the first method,

242 plants are required for 1/10 acre. For the second, 121 plants.

Cultivation should begin in April and continue thru August. Two or three hoeings may be necessary to keep the patch free of weeds.

Training. The plant should be confined to hills or to a narrow hedge row. Without such training the patch will become a thicket in a short time. When harvest is over, the old canes should be cut out immediately and burned. This practice greatly reduces the chance of infecting the new growth with diseases.

Pruning. Raspberry canes grow in one year, produce a crop in the next growing season, then die.

BLACK RASPBERRIES. When the new shoots are about 2 feet tall the tips should be pinched off. In the following spring the lateral branches should be pruned to about 10 inches in length. The old canes should be removed as soon as the crop is harvested.

RED RASPBERRIES. The first pruning which a red raspberry should receive is in the spring of the fruiting year. The canes should be cut back to a height of 4 to 5 feet, depending on their vigor. Severe cutting back reduces the yield. The weak canes should be pruned away to leave about 3 strong ones per foot in the hedge row system, or 7 to 10 canes if grown in hills. The canes may be removed as soon as they have borne their crop, or they may be left until pruning time the following spring.

Yield and return. Either the 24-quart or the 24-pint crate is the common marketing container for Kentucky raspberries and yields are estimated in crates per acre. Fifty 24-quart crates, or a hundred 24-pint crates, per acre is a good yield. The first crop is produced the second year after planting, but the yield will be less than half the amount expected from the crops that follow. A planting should produce profitable crops for at least five years.

DEWBERRIES

Dewberries are grown in Southwestern Kentucky as a commercial crop for car-load shipments. The Lucretia variety is

used. Dewberries should be planted in rows 6 to 8 feet apart, 3 feet apart in the row. Early spring and summer cultivation should be given as recommended for raspberries. The vine growth should be allowed to trail on the ground during the growing season; then, early in April, the vines should be tied up to a single-wire trellis, 3½ feet above the ground. The vines should be pruned off 4 inches above the wire. The fruit ripens at the same season as raspberries. For further details of Dewberry culture write to the Department of Horticulture, Kentucky Agricultural Experiment Station, Lexington.

GRAPES

The grape is one of the surest fruit crops in Kentucky, because it usually blooms after spring frosts are over. In many parts of Kentucky there is a local demand for fresh grapes at satisfactory prices. Grapevines come into bearing the third year and, if well cared for, the vineyard will last a lifetime.

For local sales the Concord is the best variety. The vines should be planted in rows 8 to 10 feet apart and 8 feet apart in the row. About 550 to 700 vines are required per acre. A good yield after the third year is about 10 pounds per vine. Usually four sprayings each season for the control of Black Rot are necessary. For further details on grape growing write to The Kentucky Agricultural Experiment Station for Extension Circular No. 209.

STORY OF THE PROJECT

Subject. "How I Grew My Strawberries." "How I Grew My Raspberries," etc.

Instructions. The story must be the work of the club member. Pen and ink should be used. Everything of interest should be told. If the story is interesting and well written it may be sent to a farm journal for publication.

SUGGESTED OUTLINE FOR THE STORY.

1. How I became a club member.
2. Why I selected the small-fruit project.

3. The object of my project.
4. Selection of the plot of ground.
5. Preparation of the soil.
6. Setting the plants—cultivation and pruning.
7. Picking.
8. Exhibits, prizes won, etc.
9. An account of the yield, cost of production, profit.
10. Give anything else of interest. If a picture of the crop is available, send it with the record book.

REFERENCES:

Kentucky Extension Circulars 209, Grapes for the Home; 235, Raspberry Culture in Kentucky, and 238 Strawberries for the Garden.

Farmers Bulletins 887, Raspberry Culture; 1028, Strawberry Culture, Eastern U. S.; 1403, Dewberry Growing; 1458, Strawberry Diseases; 1488, Diseases of Raspberries and Blackberries; 1560, Preparing Strawberries for Market.

Write to the Kentucky Agricultural Experiment Station for information on spraying and Insect and Disease control measures.