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Cane and Bush Fruits for Nebraska

By C. C. WIGGANS AND E. H. HOPPERT

A small patch of cane and bush fruits adds considerably to the attractiveness of home life, especially at meal time. Just at the season of the year when fresh fruits are scarce on the farms of Nebraska, the berry patch can be called upon to furnish the dessert for the family meal. In addition it ought to furnish sufficient fruit for jellies, jams, and preserves for the rest of the year. Should there be any surplus above the needs of the family, it can easily be sold locally at good prices if a little advertising is done.

The cane fruits recommended for Nebraska include only raspberries and blackberries; the bush fruits, currants and gooseberries. These fruits are easier to grow than tree fruits; they come into bearing earlier, have fewer pests to bother them, and require very little room. They may be placed at the borders of the vegetable garden and cared for in conjunction with it.

Currants and gooseberries, because of their hardiness, are widely grown in the state. They are not as plentiful as they deserve to be in the west half of the state, however. Raspberries are found on comparatively few farms at present. That they can be grown over a much larger part of Nebraska than is generally supposed, is indicated by the

FIG. 1.—A productive red raspberry patch near Florence.

success Mr. Wm. Spoeneman has had with them on the table northwest of Brule in Keith county. Mr. Spoeneman has had his best success with the Cumberland Black Raspberry, having sold as high as $200 worth in one year from about a quarter of an acre. Red raspberries can be grown successfully also, if a proper site is chosen and the plants given care and winter protection. Mr. C. H. Bonar near Florence in Douglas county has been harvesting 100 to 135 crates of red raspberries from a ¼ acre plot. These sell at from $4 to $6 per crate.

CHOOSE A FAVORABLE LOCATION

Success in raising these fruits is in a great measure determined by a favorable location. They ripen during the hottest season of the year. If hot winds can gain a free sweep at them the crop is sure to suffer. This injury may be prevented by choosing a north or northeast slope; or the plants may be set to the north of the farm buildings or a grove of trees. In all events, the site should be near the garden or orchard. If it is impossible to place the plants in a sheltered spot to begin with, a quick growing windbreak may be planted at the south and west at the time the plants are set. Russian mulberry serves the purpose admirably where it is hardy (the eastern third of the state); where a hardier sort is needed, the Siberian pea tree or the Russian olive may be used. If in addition the patch can be so located that it may be irrigated at critical periods, all the better.

SOIL

Cane fruits and bush fruits may be grown successfully on nearly all of the soil types found in Nebraska. Whether the type be sandy or clay, it should be rich in decaying vegetable matter, since this determines in a large measure its water holding capacity. The efforts of the grower in conserving moisture will be rewarded by larger and better crops.

Raspberries and Blackberries

Characteristics—There are three kinds of raspberries: black, red, and purple. The canes of the black raspberry are vigorous, purplish in color, and branch readily, especially if pinched back. This type does not sucker, new plants being produced by covering the tips of the canes with dirt. The fruit is black and firm.

Red raspberry canes are upright, rather slender, and light brown in color. They do not produce strong laterals as a rule. Most varieties sucker readily, making it necessary to do considerable cultivation and hoeing to keep them confined to rows. The berries are red and rather soft and do not ship as well as the black caps. However, the quality is better.

The purple cane raspberries are hybrids between the red and the black. Some of them sucker like the reds; others do not sucker but root at the tips of the canes like the black caps. The fruit is purplish in color, juicy, and of good quality. The dull color is regarded as a drawback on some markets, but for home use the better varieties such as Columbian and Cardinal are well thought of.

The blackberry has upright canes with rather strong laterals. The canes are very thorny as anyone who has picked blackberries can testify. Another undesirable characteristic is that the plant suckers profusely, making it very difficult to cultivate and confine to rows, or to eradicate.

SELECT HARDY VARIETIES

The black raspberry seems to be the hardiest for Nebraska conditions, with the Cumberland as the leading variety. There is no such outstanding variety among the reds as the Cumberland is among the blacks. However, the Latham and King are two very good ones, especially if winter protection is given. The Chief, Sunbeam, and Ohta are hardier but the fruit is not as good, neither are they as productive. The St. Regis is a so-called everbearing variety, producing a crop on the old canes in early summer and in favorable seasons on the new canes in the fall of the same year. The variety is not proving as satisfactory as was first expected. The outstanding purple cane raspberry is the Columbian, a hardy, vigorous, productive variety.

The blackberry is not very well adapted to Nebraska conditions, being subject to winter injury to a much greater degree than the raspberries. Of the many varieties of

blackberries tried out by growers, the Snyder and Eldorado seem to have given most satisfaction, but neither is very hardy as compared with the Cumberland raspberry.

PLANTING

Raspberries and blackberries are usually planted in rows 6 to 8 feet apart and the plants 3 to 4 feet apart in the row. It is important that only disease free plants be used whether these come from a nursery or the home plantation. The easiest way to set out the plants is to throw out a furrow with a lister. Spread out the roots of the plant in the bottom of the furrow and tramp down the surface dirt as it is pulled over the roots. The top is then cut back to about 2 inches above the surface of the ground. If the canes are affected with anthracnose, they should be cut flush with the surface.

A TRELLIS IS DESIRABLE

For Nebraska conditions some sort of support is needed to keep raspberry canes from being broken by strong winds. A trellis is certainly desirable for the blackcaps

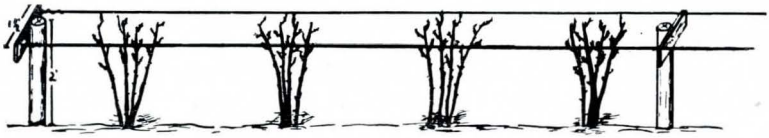

FIG. 2.—This type of trellis is ordinarily used for blackberries.

and the purple canes. It may consist of a single row of posts 20 to 30 feet apart, the posts extending about 2 feet out of the ground; across the top of each post is nailed a 2 x 4, 2 feet long and a No. 10 or 11 wire strung along each edge (see Fig. 2). Red raspberry canes should be supported where an unusually vigorous growth is produced. The best arrangement in this case is to have the posts extend 4 feet out of the ground with a wire 2 feet from the ground and another 2 feet above that. The bearing canes are tied to the upper wire in the spring. This wire may be barbed to keep the canes from slipping (see Fig. 3). The new canes are tied loosely to the lower wire to keep them in the row and to protect them from being broken. Raffia or twine is used in tying.

TILLING IS IMPORTANT

Vigorous growth and good crops depend in a large measure on conserving moisture. Weeds use up moisture and therefore should be destroyed. Shallow tillage (2 to 3

inches) is as good as deep tillage and less apt to injure the roots. Injuring the roots of the red raspberries and blackberries induces suckering. Cane fruits like a rich soil and therefore an annual application of well rotted manure pays.

After the first year, cultivation may be replaced by a straw mulch, where straw is available. For the average Nebraska farm this method is to be recommended since it is the surest way of keeping down weeds and holding the moisture.

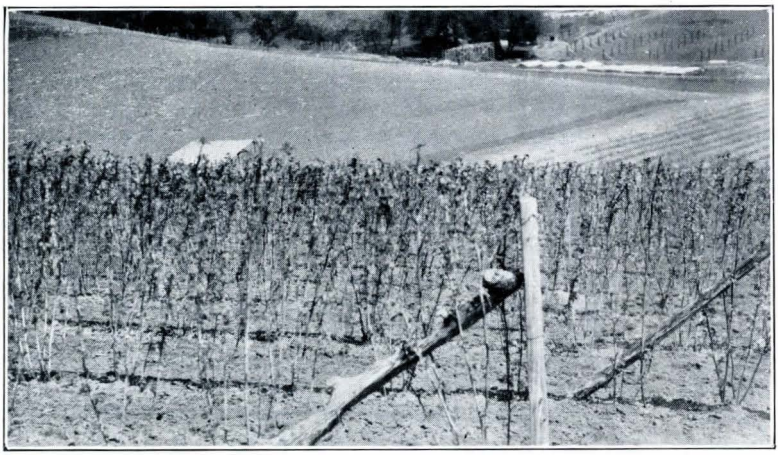

FIG. 3.—A trellis such as is used for grapes is desirable for red raspberries.

PRUNING IS VERY NECESSARY

Pruning and thinning are very essential if good crops are to be produced. Certain of these operations are best performed in the summer and others in the spring as the following discussion shows.

Thinning out the young canes.—Usually a plant in good vigor will produce more canes and therefore more fruit buds than are needed for a good crop. From 5 to 7 vigorous canes are sufficient for each hill. All others should be removed. The red raspberries and blackberries tend to form a hedge row instead of remaining as distinct hills. These are thinned to a single row of canes 5 to 6 inches apart in the row.

Heading back.—Red raspberries require very little heading back but unusually vigorous canes should be cut back to about 4½ feet. The black raspberries, purple cane rasp-

berries, and blackberries have long laterals if the canes have been pinched back in midsummer. With black raspberries these laterals should be headed back to 5 or 6 inches. Formerly they were left 12 to 14 inches long but it has been found that the berries do not ripen as evenly nor do they grow as large as with the shorter laterals. A better quality berry is produced by the heavier pruning. With purple canes and blackberries, the laterals will need to be left somewhat longer, 8 to 12 inches, the exact length depending upon the fruiting habits of the particular variety.

Pinching the growing tips.—The tips of the young canes of the black raspberries, the purple canes, and the blackberries should be pinched off when they are 2 to 2½ feet high to stimulate the production of laterals. Since all the canes do not reach the desired height at the same time, the plantation will have to be gone over two or three times. The red raspberries should not be pinched back since this practice induces more suckering or the formation of weak laterals subject to winter injury.

Cutting out the old canes after fruiting.—The canes bear but once and are of no particular value to the plant after producing the crop. Then, too, they may serve as a source for infecting the new canes. For these reasons and also because they are more easily removed at this time, they should be taken out soon after the crop is harvested. A V-shaped, sharpened hook, attached to an old spade handle

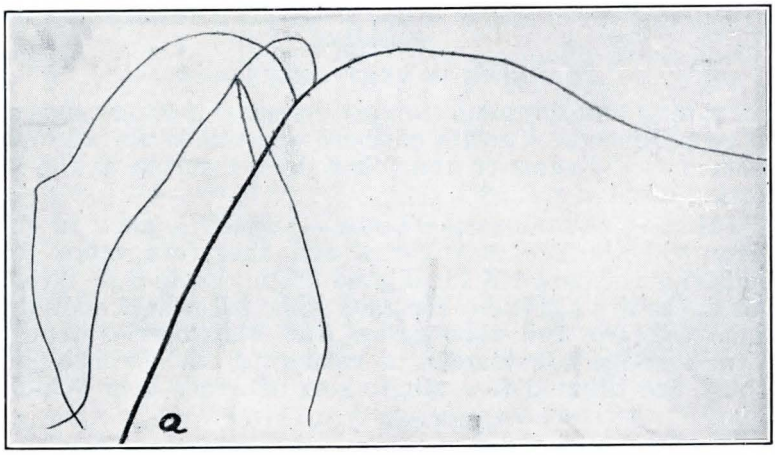

FIG. 4.—A black raspberry cane that was not summer pinched. Note the long drooping cane with but three weak laterals.

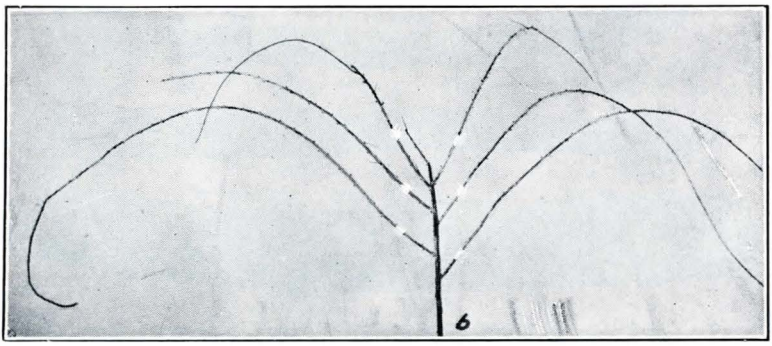

FIG. 5.—Summer pinching of black raspberries promotes strong fruitful laterals. The following spring these are cut back as shown.

is a very useful tool for this purpose. It is well to leave the old canes standing in the row for a few days after they have been cut off, to prevent a blistering of the new stems because of the sudden exposure to direct sunlight. When the old plants have withered and dried up they should be removed and burned.

WINTER PROTECTION

Black raspberries can be raised successfully in 3 years out of 5 without winter protection other than that afforded by a windbreak. The other kinds ought to be covered in some way to prevent dry winter winds from killing the fruit buds and canes. Covering the canes with soil is the most satisfactory. They are taken from the wires, bent in one direction to the ground and staked down. Then 2 to 3 inches of dirt is thrown over all the new wood with a shovel or a plow.

HARVESTING

Raspberries are ready to harvest when they separate readily from the core. When the berries become too ripe, they drop off very easily and much fruit is lost. Blackberries turn black sometime before they are ripe but they should not be picked until the stem separates readily from the core. When the main crop is ripening, raspberries and blackberries should be picked at least every other day.

If the berries are to be marketed, shallow pint boxes ought to be used to avoid crushing. In order that they they may be as attractive as possible they should be picked when dry and placed immediately in a cool shady place.

FIG. 6.—Anthracnose on black raspberry canes, a disease very common in Nebraska. It weakens the canes, lowers the production, and makes them more subject to winter injury. Proper spraying controls it.

COMMON DISEASES

Anthracnose is the one disease most likely to be encountered in Nebraska on the black raspberries. Spots begin to appear on the young canes and leaves about the middle of May. On the canes these spots enlarge and turn gray in the center, the edges being reddish and slightly raised. Badly infected canes are seriously weakened and are very subject to winter injury. If they do survive they usually produce dry tasteless fruit and not much of that.

Controlling Anthracnose.—Start with disease free plants when setting out a new patch. When the disease is already established in an old planting it is necessary to spray twice each spring in order to control it. The first application is made just after 2 or 3 leaves on the old canes have unfolded, using 1 part of liquid lime-sulfur to 9 parts of water. The second application is made a week before the blossoms open, using 1 part of liquid lime-sulfur to 39 of water.

Other diseases that are sometimes found are orange rust, crown gall, and mosaic. Orange rust appears as reddish brown or orange colored spots of a powdery nature on the leaves. Crown gall is an abnormal enlargement or swelling at the base of the plant or along the stem. There is no known remedy for either of these troubles. When they appear, dig out the affected plants and burn them. Mosaic is becoming a very serious trouble in Michigan and other commercial sections to the east of Nebraska. At present it is not yet common here but may be brought in on infected nursery stock. This is an important reason for getting disease free plants. Mosaic is characterized by a mottled foliage which curls and becomes yellowish.

INSECTS

At present there are no insect enemies attacking the raspberries and blackberries requiring systematic control measures. Occasionally cane borers are reported. These cause a wilting of the new canes early in the summer. When this injury appears, cut off the wilted canes at the ground and burn them, thus destroying the borers.

Currants and Gooseberries

Winter injury is uncommon with currants and gooseberries even in western Nebraska. Productiveness and size of fruit, rather than hardiness, are therefore the determining factors to be considered in selecting varieties.

VARIETIES OF CURRANTS

The best large fruited varieties are Perfection and Wilder. North Star is a popular, small fruited variety because of its productiveness and good quality. London Market, Fay's Prolific, and Victoria are also good varieties. If a white fruited sort is desired White Grape should be ordered. Black currants are unpopular because of their musty odor and flavor and because of their susceptibility to white pine blister rust.

VARIETIES OF GOOSEBERRIES

The best American varieties are Oregon and Downing. They are medium in size and very productive, the Oregon being preferred because it has fewer and less pronounced spines. Poorman is a new, larger fruited variety that is proving very popular where it has been tried. The European gooseberries are much larger as a rule than the American sorts but do not produce as well; furthermore, they are quite susceptible to mildew.

SECURING PLANTS

The quickest way to get a start with these fruits is to buy good one or two year old plants from a reliable nursery. New plants may be produced from old ones by bending some of the vigorous outer shoots of the previous season to the ground and covering with 3 to 4 inches of soil. By the following spring the cane is well rooted and may then be cut off close to the mother plant and transplanted.

SETTING THE PLANTS

To allow for proper development and ease of cultivation and harvesting, the plants should be set in rows 6 to 8 feet apart, the plants being 4 to 5 feet apart in the row.

Before setting out the plants, broken roots should be removed and the tops cut back to 6 or 8 inches. A hole is dug large enough to hold all of the roots without crowding or bending and deep enough so that the base of the lowest branches come just below the level of the ground. A little of the surface dirt is scattered in the bottom and the plant placed in the hole with roots spread out. Several shovels-

ful of good surface soil are thrown over the roots and the soil firmly tramped down. The bases of the lower branches are covered to make them take root.

TILLING

Currants and gooseberries are shallow rooted. For this reason tillage is especially important as it keeps down the weeds and holds the moisture. Shallow cultivation is desirable so as not to injure the roots. Mulching with 6 inches of straw will take the place of cultivation admirably and is highly recommended for the farm plat where straw is usually abundant and labor comparatively scarce in spring and early summer.

MAINTAINING FERTILITY

If large crops of fruit are expected the soil must be kept fertile. Each spring a fairly heavy application of well rotted manure should be worked into the soil before regular cultivation begins or before the straw mulch is applied.

PRUNE REGULARLY

Currants and gooseberries produce their best fruit at the base of one year old wood and on spurs on 2 year and 3 year old wood. Until the plants are 3 years old, therefore, they require very little pruning. In the event that the bushes produce a great number of new shoots before they reach this age, these shoots are thinned out, leaving 7 or 8 of the most vigorous. After the bushes are 3 years old, pruning must be resorted to in order to renew the good and to remove the poorer fruiting wood. The process is simple. Each year the branches over 3 or 4 years of age are removed at the base and 6 to 8 new shoots are allowed to replace them, the other new shoots being removed. Varieties that have a drooping habit are pruned most at the outer edges whereas upright growing varieties are thinned out at the center.

DISEASES AND INSECTS COMMON IN NEBRASKA

Anthracnose.—Anthracnose produces many small brown spots on the upper leaf surface. Later the leaves turn yellow and drop off, greatly weakening the plant.

Leaf Spot.—This disease differs from Anthracnose in that the spots on the leaves are irregular, having a pale center and brown margins. On the under side of the leaves black pustules appear. This trouble also causes the leaves to drop.

Powdery mildew sometimes appears on the gooseberries, attacking the young leaves and shoots and coating them with a white powdery growth.

The Imported Currant Worm is the worst offender among the insects, attacking both currants and gooseberries, frequently stripping the bushes of leaves in a few days. There are two broods usually, the first appearing just after the leaves are out and the second about the middle of June.

Currant aphids are becoming quite generally distributed over eastern Nebraska. When they become very numerous, serious injury to the plants may result. They suck the sap while hiding in pockets on the lower side of the leaves. The upper side of these pockets turn reddish.

SPRAYING CONTROLS PESTS

If one is spraying his apple orchard, the currants and gooseberries may be sprayed at the same time and with the same materials as are used in the cluster bud and petal fall sprays.

To control the fungus troubles mentioned above, use ½ a cup of liquid lime-sulfur to 1½ gallons of water (1 gal. to 39 of water). Then add 1½ tablespoonfuls of lead arsenate for the control of the currant worm. This mixture should be applied first just after the leaves have opened and again about 10 days later.

To control aphids, spray with nicotine sulphate at the rate of a teaspoonful to a gallon of water in which has been dissolved an ounce of laundry soap. The applications are made just as the buds begin to open and again after the leaves have opened.

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