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Blueberry Growing--A New Industry In Washington

by

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BLUEBERRY GROWING—A NEW INDUSTRY IN WASHINGTON

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Blueberry growing has already become an important industry in some of the Eastern States and as climatic conditions in Western Washington are particularly favorable for its culture it should prove to be a valuable addition to the small fruit industry of this section.

There are nine or more different species of native blueberries found growing wild in the Pacific Coast region of Washington, but so far as known no varieties of these native species have been put under cultivation. The three most commonly found in Southwestern Washington are Vaccinium ovatum Pursh locally known as the evergreen blueberry or huckleberry; Vaccinium parvifolium Smith commonly called the red huckleberry and Vaccinium ovalifolium Smith called the blue huckleberry. Most of the other species are found on the slopes of the Cascade Mountains. The name huckleberry is commonly used on the Pacific Coast to designate blueberries or blueberry plants, though so far as the writer knows there are no true huckleberries found in Washington.

The huckleberry, Gaylussacia baccata C. Koch, has ten relatively large seeds, while the blueberry has numerous seeds which are in most cases so small that they are not noticed when the berries are eaten. The seeds of the cultivated blueberry are much smaller and more numerous than those of the native wild blueberries, and the cultivated berries are larger and in most cases less acid. The eastern cultivated blueberry which is the one under discussion is known scientifically as Vaccinium corymbosum, and wild plants of the same species are found in all the eastern states.

Though blueberries have long been known, and wild berries have

Fig. 1. Three-year-old blueberry bush.

been harvested and used, it was not until 1907 that any attempt was made to improve the plants and to place them under cultivation. Dr. Frederick V. Coville, U. S. Department of Agriculture, started experiments at that time and worked out the essential requirements for blueberry cultue and methods for propogating the plants. Miss Elizabeth C. White had assembled at the "Whitesbog" in New Jersey a large number of blueberry plants which produced berries of unusual size, and these were used to a large extent as the foundation for breeding improved varieties. Of many thousand hybrids which Dr. Coville raised from seed, three, known as Cabot, Katherine and Pioneer, were selected as being up to the standard which he required. In addition to Dr. Coville's hybrids above named there are six others which were selected from the wild plants chiefly for their size, though other factors also were taken into consideration. These varieties are Adams, Harding, Sam, Dunfee, Rubel, and Grover. With one exception, these varieties and the three Coville hybrids are now being grown in the experimental plot at the Cranberry Branch Experiment Station, at Long Beach, Washingon. The plants were obtained from the J. J. White Co., Inc., New Lisbon, New Jersey, the oldest plants in the plot being four years old in 1928.

All the varieties which are being tested in the experimental grounds are prolific. The varieties Harding, Katherine and Cabot appear to be somewhat better adapted to local conditions and produce larger berries than the other varieties. The Rubel variety produces a larger number of berries than any of the others but they are much smaller.

Soil Requirements for Blueberries

Blueberries, like cranberrries, require an acid soil, preferably a mixture of peat and sand. They grow readily, however, in sandy or gravelly soil provided there is sufficient moisture and plant food available. Where only a few bushes are desired for the home garden, the required soil conditions may be artifically created by the addition of a few sacks of acid peat. In the Eastern States the wild plants of this species grow in a variety of locations all the way from hillsides to swamps, but they apparently yield more and larger fruit

in a soil composed of peat and sand. There need be but little peat present if, as already indicated, there is sufficient moisture available to keep the plants irrigated during periods of drought. Blueberry plants grow readily in deep peat if the drainage is good, but they make a much slower growth than where some sand is mixed with the peat soil.

In Washington cranberry growing districts, the areas along the edges of the bogs where the peat is too shallow for raising cranberries make ideal locations for blueberry growing. Such areas can be ploughed five or six inches deep and made ready for planting with but little expense. Many areas in Western Washington counties are well adapted to blueberry growing.

Propagation

One of the chief reasons for the slow development of the industry is the comparatively high price of the plants. This is no doubt caused by the fact that they have been found difficult to propagate. A complete account of various methods for propagating blueberries may be found in Bulletin 974, U. S. Department of Agriculture. This Experiment Station has found the following methods very satisfactory.

Wood to be used for propagation purposes is gathered in January or February before growth starts. Wood two years old or older is used and is stored by burying in moist sand until the propagating frame or ground is ready.

A propagating box or frame about eight inches deep may be used or a bed may be prepared directly in the ground for propagating. The propagating frame or bed is filled with a mixture consisting of two parts of peat, thorougrly pulverized, to one part of fine sand. This mixture will not pack and will enable the new shoots to come through easily.

The wood is cut into pieces about six inches long and is buried in the propagating frame or bed in a horizontal position, and covered with about one to one and on-half inches of the peat and sand

mixture. The plot is then watered thoroughly and again at intervals to keep it from drying out though the bed should not be kept too wet. Within three or four weeks after growth is started in established blueberry bushes the new shoots appear through the ground from the cuttings. These new cuttings put out roots in July or August. A higher percentage of rooted cuttings is secured if the propagating bed is in a location that is shaded part of the day. If carefully handled, the rooted cuttings may be removed to the field when a year old. Normally the old wood decays after the new shoots become rooted.

Fig. 4. Rooted blueberry cuttings.

Another method which has given very good results is as follows: just before growth starts in the spring all side branches or shoots are removed from a limb or branch of a blueberry bush. The limb is bent over until it is in contact with the soil where it is staked in place. It is then covered with an inch or two of peat and sand. One or more shoots will come through the ground from those portions

Fig. 3. Blueberry blossoms.

Fig. 2. Blueberry plant showing set of fruit on branch of 3-eyar-old plant.

of the limb where the other branches were removed. These new shoots produce roots at the end of the summer and can be cut off and removed to the field later on. The branch it not buried in the soil until March as branches covered in the wet ground during the winter have a tendency to decay before growth starts in the spring.

Planting and Care of Blueberries

The White Company of New Jersey, which probably operates the largest blueberry acreage in the United States, recommends planting eight feet between rows and four feet between plants. It is believed, however, that under Pacific Coast conditions it will be much easier to control weeds if the plants are spaced far enough apart so that a horse cultivator can be run between the rows both ways. It is therefore recommended that the plants be set eight feet apart each way. In home gardens or where space is limited, the plants may be set three or four feet apart. There has been no experience locally with fall planting but no trouble has been experienced in getting all plants to grow when they are set out in the spring about March or April. Plants set out at this time should produce new shoots from ten to twenty inches in length by the end of the season. They generally set some fruit buds also but it is probably better to remove the first season's blossoms so that the plants may become more thrifty. The second year the plants bear a few berries and the crop increases each year for several years.

Bees, especially bumble bees, are very active in a blueberry planting during blossoming time and if two or more varieties are present there will be little trouble in securing a good set of fruit. As soon as growth starts in the spring the soil around the plants should be thoroughly cultivated. This loosens up and aerates the soil which has been packed considerably by the winter rains. Cultivated ground warms up rapidly and serves to protect the blueberry blossoms against spring frosts. The plants are fairly resistant to frost—no injury having been noted to date except for a light winter kill of some immature tips. No pruning is necessary at least until the plants are four or five years old. As the young wood produces the largest berries, enough old wood should be removed to insure a good growth of new wood each year.

PESTS

No serious injury has been caused in the Experiment Station plot by either insects or diseases. The only insect injury was caused by the Tussock Moth (Notolophus antiqua Linnaeus). This insect is found on various native hosts and also occasionally attacks the cranberry vine and berries. No fungous troubles have been encountered, so spraying has not been necessary. The greatest losses are caused by birds, chiefly robins and canaries.

Harvesting and Marketing

The berries ripen from the middle of July to the middle of August, and three or four pickings are necessary at intervals of about a week. Not many cultivated blueberry plants have yet come into bearing locally, but all berries sent to the market have sold readily at good prices. Undoubtedly there will be a growing market for this delicious fruit.