

The Cultivar Situation in Lowbush Blueberry in Nova Scotia

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Abstract

The planting out of fields to cultivars of the lowbush blueberry is quite recent. To date the following three cultivars have been named: Augusta, Brunswick, and Chignecto. Since yields have been nearly as great with seedlings from superior clones as with rooted cuttings, and the cost of raising seedling plants is much less, growers are using seedlings rather than rooted cuttings. Yields two or three times those from native stands are expected from plantings.

Lowbush blueberries are harvested from native stands of *Vaccinium angustifolium* Ait. and *V. myrtilloides* Michx. Growers improve the wild stands by controlling weeds. Honeybees are often brought into the fields during bloom to increase fruit set. A few growers are using fertilizer, mainly nitrogen, to improve the growth of plants and thus increase yields. Measures to control pests are only taken when epidemic infestations of insects or diseases are encountered. The berries are harvested in late August or early September using hand rakes. A few prototype harvesters have been developed, but these harvest less than 5% of the entire crop.

We have a few plantings of the highbush blueberry in Nova Scotia, and one grower has in excess of 55 acres under cultivation. The growth of plants is considerably less than in New Jersey due in part to the shorter growing season and also temperatures during the growing season are cooler. Canker, caused by *Godronia cassandrae* Pk. f. *vaccinii* Groves is probably the most serious problem. All of our highbush berries are picked by hand during the latter part of August or early September.

As a result of our geographic location, we are in an interesting market

situation. It is not a matter of the highbush versus the lowbush, as most of our highbush are exported fresh to Boston and vicinity. Prior to the mid 1970's, Nova Scotia growers received the price that developed after the rest of the North American blueberries were harvested. If the processors had a lot of berries, prices were poor; if, however, supplies of berries were weak or non-existent, prices rose to values that sometimes exceeded those paid in Maine. The average price paid in Maine for lowbush blueberries during the period 1972 to 1976 inclusive was 25 cents per pound; whereas growers in Michigan received 31 cents per pound during the same period. In the period 1973 to 1976 a considerable quantity of lowbush blueberries from Eastern Canada was sold in Europe. Growers and shippers received a fair price for these berries and it undoubtedly increased the price of berries sold in North America. If this market can be maintained it will definitely strengthen our industry.

Since the first cultivar of the lowbush blueberry was only named in 1975, the subject is rather limited and new. Propagation has been from cuttings of superior clones and seed. Plantings of lowbush blueberries have been set out in all of our Atlantic Provinces as well as Quebec and Ontario. These remarks will deal mostly with our region, but they are probably applicable to Maine as well.

Current Cultivars

To date we have named three cultivars. The first named Augusta (4) originally came from Maine and we tested it under the number ME2. It is a fine blueberry. The plant is produc-

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tive with the berries weighing about a gram, and the berries are borne well off the ground. It has good foliage and it is easily propagated by cuttings. Furthermore, the plant grows well in the greenhouse and is a good parent for further breeding. It should only be classed as medium with regards to flavor.

The second cultivar was called Brunswick (3) and we collected it from a native stand in New Brunswick. Under field conditions this cultivar grows well and develops a vigorous shoot. The berries are generally larger than Augusta and there are many berries in a cluster of fruit. Unfortunately, it is difficult to grow in the greenhouse as the new shoot growth tends to develop flower buds which create a problem when taking cuttings. It has been tested under the number 734 and will be planted more extensively as stock becomes available. The fruit has less bloom than that of Augusta but the flavor is better.

The third cultivar, Chignecto (6) was collected from a native stand in Nova Scotia. The vegetative growth of this cultivar is vigorous and it develops strong lateral growth when the terminal shoot is cut. The fruits of Chignecto weigh only 0.5 g but there are several fruits in each cluster of berries. This cultivar has been tested under the number 508 and has been the most widely and extensively planted of the three named to date.

The three initial cultivars released from the Kentville Station will ultimately be replaced by more productive and vigorously growing cultivars. Clones 510, ME4161 and ME3 are possible new cultivars; however, we are more interested in some of our selections which have yielded more than 5 tons per acre (2).

The Changes in the Last 5, 10 or 15 Years

There has been considerable change in the thinking or public reaction towards the program of planting out superior clones. First of all, let us briefly review the program. We began the program in 1961 of selecting superior clones from the wild. By 1965 we had collected over 900 clones and began the process of culling these down to 20 to 30 of the best. This we had achieved by 1974. By 1969 we had some of the first progenies resulting from crosses among our better clones. Since then we have continued to make crosses each winter and to plant out about 5000 seedlings each spring. We now have about 341 selections from our breeding program under at least second test. In 1975 we published the results of the variation found in fruit yields and related characters in two diallels (4). This spring we set out an experiment that we hope will give us an answer as to the amount of progress made in breeding. Three sets of progenies from common wild stock are to be rated against four sets of progenies from controlled crosses of superior clones, and three open-pollinated progenies of top clones.

By 1970, our field plots were showing sufficient productivity that planting programs were adopted by three of the provinces in the Atlantic Region. In 1976, planting or pilot projects were initiated in Quebec and Ontario. However, the big impetus came in 1976 when the federal government signed an agreement with the Nova Scotia Blueberry Growers' Association to work under the New Crop Development Fund. Five acres were to be planted out in each of the next three years on two growers' fields. In New Brunswick, the provincial government has not worked under New Crop Development Fund but has chosen to work under another pro-

gram. Beginning in 1978 they plan to plant approximately 20 acres per year.

Within the industry there has been a demand to grow plants from seedlings whose parents were superior clones. Initially it takes less room to grow the plants and the growth habit is quite different from a cutting. A seedling plant tends to develop rhizomes earlier whereas a cutting grows more like a tree. We have shown that the yield from our best cultivars is superior to seedlings but the margin is not great.

There are two things that will probably determine how fast the plantings of superior clones will develop, ease of establishing plantings and the price paid for fruit. One of the problems encountered in establishment is frost heaving especially in the first year after planting. We have shown that burying the plant to two-thirds of its height will assist rhizome development in subsequent years (1). Another attempt to overcome the problem is by mulching. Some answers will come from the 1977 plantings which were mulched late in the fall.

The most important influences however will be the price paid to the grower for his fruit. If a favorable

market is found, money will undoubtedly be found to cover the cost of planting. If prices are low, few growers will risk putting money into new fields.

Our many years of plot experimentation, our experience with grower test plots and the initial success of the 1977 large commercial plantings convince me that we are on the threshold of a new and exciting horticultural development.

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Authors should send 2 typewritten copies with glossy illustrations where needed. Henceforth, single quotation marks to indicate cultivar names will be omitted.