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Pollination of the Sweet Cherry

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Since sweet cherries have been planted on a commercial scale it has frequently been noticed from many different localities that the plantings were failing to produce a good crop. The trees at normal bearing age are healthy and vigorous, producing a heavy bloom but a very light crop of cherries. Different factors may enter into the problem in different localities, but the main limiting factor in all these places has been proper pollination.

Self-sterility. So far as tested all sweet cherries are self-sterile; i. e., a variety will not bear fruit if pollinized by pollen from trees of the same variety. Up to this time forty-eight standard varieties and seedlings have been tested. In 1922 tests were carried on with the Bing, Lambert, and Napoleon (Royal Ann) at The Dalles, where a minimum of one thousand blossoms were used on each variety. With the Bing not one fruit resulted, while with the Lambert and Napoleon the set was one-tenth of one percent.

At the Experiment Station at Corvallis, Oregon, a number of cherry seedlings are being fruited. The most promising of these are tested for self-sterility each year, but in experiments on twenty-eight seedlings not a single cherry has resulted from self-pollination.

It is often claimed that the worthless type of seedlings are self-fertile. Accordingly, three of the poorest that were no better than the wild Mazzard cherries were tried out in 1922. No cherries were borne from the 500 blossoms tested on each tree.

Inter-sterility. Furthermore, it is shown that the Bing, Lambert, or Napoleon are inter-sterile. The use of Napoleon pollen on Lambert blossoms gave 1.4 percent set. Other cross-pollination tests between the three varieties gave from .4 percent set down to no set at all. This inter-sterility is not confined to these three varieties, as we find other varieties and seedlings that may be inter-sterile with one or all of the

three varieties mentioned. It is very frequently found that a variety or seedling is highly inter-fertile with one and decidedly inter-sterile with another so far as commercial crops are concerned.

Pollinizers and Cross-pollination. In choosing a variety as a pollinizer for Bing, Lambert, and Napoleon, it is the aim to use a variety of as high commercial value as possible. Also if possible the same variety should be equally potent on any one of the three varieties. Up to the present time the secondary varieties used for pollination have proved of far less commercial value than the main varieties, with one exception, and it is doubtful if that one can be grown to any extent and the present prices still be maintained. The Long-Stemmed Waterhouse, formerly recommended, was considered a commercial variety from a canning standpoint, but of late has been rated by canners at not higher than a second-rate canning cherry.

From observations in various orchards it would seem that a grower could afford to disregard the commercial possibilities of a variety in favor of its pollinizing ability. If a variety is one that by cross-pollination will produce heavy crops on the remainder of the orchard, its own fruit can be neglected and yet the orchard be put on a paying basis.

Number of Pollinizer Trees. The proportion of pollinizers to use will undoubtedly vary in different sections. In those sections having warm pleasant weather during blooming season the proportion of pollinizers need not be as great as in those places where the weather is apt to be unsatisfactory or the fair weather of short duration. As cross-pollination depends upon insects the weather must be such that it will permit the insects to fly and visit the flowers. For greatest efficiency under adverse conditions a limb or two containing the pollinizer in each tree might be considered the best. For many reasons this method would be found difficult to carry out. Under normal conditions one tree in nine is considered sufficient. This would make every third tree in every third row a pollinizer.

In planting orchards, the pollinizer should be included at the time of planting. Where the orchard is of bearing age but the need of other varieties is seen, the best way is to graft in other varieties. With old trees only part of the tree should be grafted at a time. Grafting over the whole top at one time will deprive the root system of its necessary plant food and prove a considerable set-back to the tree. It would be better to graft but half of the tree the first year, leaving the remainder until the following season.

Varieties Suitable as Pollinizers. Of the varieties tested and proved successful, four are commonly listed by nursery firms: Black Republican, Black Tartarian, Centennial, and Governor Wood. The Black Republican and Governor Wood have had a fair commercial use of late. Other less-known varieties or recently named seedlings are: Coe, Elton, Norma, Major Francis, Black Oregon, and Early Rose. In 1922 the three following varieties, Norma, Elton, and Coe, performed the most consistently on the three commercial varieties. These are, however, comparatively scarce.

One thing must always be considered in choosing a variety for pollinizer. While a tree may be called by a certain varietal name and closely resemble that variety it is often found to be different. Again

seedlings often appear that are so nearly like the parent as to be indistinguishable from it in external characteristics but will be found to be entirely different as to pollinizing ability. It is the hope of the Station to conduct work in the future with certain trees that can be used for propagating, grafting, or budding wood. After these trees or varieties have proved their efficiency in cross-pollination, material from these trees may then be disseminated among the orchardists. Until trees so tested have been certified, grafting or budding wood should be taken from trees about which there is as little doubt as possible as to the authenticity of the varietal name.

Bees a Great Help. Even after the pollinizers are provided in sufficient numbers the question of distributing the pollen is to be considered. The only partial control we have over this is in supplying plenty of bees to carry on this work. While many other insects may be found beneficial, bees are the greatest aid in cross-pollination. Recommendations for this vary from one hive to an acre to one hive to two acres of orchard.