

Fruit Production Problems In Canada

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Our main fruit problem at present is with the apple industry and, while it might be termed an industry problem more than a research problem, it is nevertheless of keen interest to research workers.

Rootstocks

One the whole, the seedling rootstocks have produced quite satisfactory trees as to habit and bearing. Of the various seedling rootstocks in use, seedlings of Antonovka appear highly resistant to collar rot and possess a high degree of hardiness. It is felt, however, that the only permanent solution to a satisfactory rootstock for the commercial apple orchards in Canada, particularly those located in the colder sections, is hardy clonal stocks.

Selection work within the hardy seedling rootstocks of Russian origin, in an endeavor to find a hardy stock

that will stool readily, has been under way for some years. Out of this work has emerged a clone known as *Malus robusta* No. 5 which stools readily, yielding some 70,000 rooted shoots per acre, and is compatible with the main commercial varieties. This stock is now being distributed to the nurserymen.

Tree Building

We next approach the problem of cheaper production through the possibility of using hardier and more satisfactory varieties for the framework of the tree. In many of our fruit districts, including the northern part of the Okanagan Valley of British Columbia, production is frequently hampered by severe winter injury of trunk and main scaffold branches. Sufficient experience has been accumulated to indicate a distinct possibility of eliminating much of this injury by the use of hardy varieties for the framework. Rather extensive trials have been laid out to study the most suitable varieties for this purpose.

To date, there is general agreement that Hibernial is the most satisfactory framework for all-round use, while evidence is accumulating that Virginia Crab is a bit too selective as to its partners. Antonovka is proving valuable from all standpoints, excepting it is a little slower in growth. Because of its

extreme hardiness *Malus robusta* No. 5 is being used as a framework variety in regions where very low temperatures prevail. About sixty varieties are under trial as frame builders. Double working has been adopted in many areas on a small commercial scale and it is felt that considerable progress will be made with this problem in the next ten years.

Varieties

A detailed discussion on varieties is not contemplated here, but there are some who are bold enough to think that the present method of determining the selection of varieties is not too sound. The variety which accounts for the greatest production in Canada is McIntosh. Fortunately, it meets with consumer acceptance, not merely as a one-sale proposition on account of its red colour, but when sold to the consumer in good condition it appeals so strongly that he is tempted after eating one to reach for another. This is not true, however, when the apple is sold in mid winter. No matter how well stored, it loses much of its original attractive quality and repeat orders become few, with the result of a lower per capita consumption. We are probably over-planted with McIntosh and apples of similar season.

We have one or two other varieties which frequently bring higher prices than McIntosh, but careful observation has indicated that where there are large red apples which appeal as a one-sale proposition to most people, they do not bring the succession of repeat sales

to the home consumer which is so essential to increased apple consumption.

One cannot but wonder just what would happen if these sorts became as heavily planted as McIntosh. It is doubtful if the present high prices or even the present per capita consumption would prevail. There is a strong feeling among many that more attention should be paid to the eating quality of future varieties rather than to stress too strongly size and colour.

Small Fruits

In the production of such small fruits as raspberries and strawberries we are plagued by the increasing spread of virus.

With both these fruits my own feeling is that we need a new approach to the problem and even the adoption of the English method of building virus-free stocks through the utilization of virus-free but very susceptible varieties as indicators. The grafting of such indicators with the untested or new varieties would appear preferable and more specific than roguing by observation in the field. A small start has been made in that direction but a larger effort is essential if the industry is to be cleared of this trouble. The English did not awake to their problem until it had completely polluted some of their best varieties and ruined their industry and they are now faced with building from the bottom up. Let us not wait until that happens here.

Breeding for disease resistance is a matter of which we are cognizant and projects for the breeding of straw-

berries resistant to red stele and leaf spot; raspberries resistant to cane blight and anthracnose; pears resistant to fire blight; and apples resistant to scab are underway.

Packages and Marketing

From the growers standpoint, marketing is presently his greatest worry and to finally solve that we need, first, a tremendously increased educational effort in the proper picking, handling, storing and packing of the product.

Much work has been done on the packing. We have all but abandoned the barrel for apples and adopted the smaller package. We have even used to a large extent a half bushel carton, but apparently the perfect package has yet to be developed. From that citadel of progress, British Columbia, comes the advice that the present western box, long heralded as the acme of packages, causes too much bruising and must be abandoned in favour of some other package not as yet definitely described but possibly along the lines of what is known as the Friday pack.

Markets today are in general reluctant to handle poor fruit because of the slow sale and heavy losses which frequently occur. The demand for good fruit is still strong. Many feel that if

we can eliminate the bruises and subsequent rots and out-of-condition fruit due to faulty handling and too long storage of varieties that are not winter sorts, our consumption will increase to an extent that will take care of our present so-called surplus.

Although we have talked a great deal about orderly marketing, much of our marketing does not attain this goal. Thus we see varieties that are good for mid-and late winter consumption competing in November and December with McIntosh which may survive in cold storage sometimes until March. About this time of the year old markets are frequently glutted with dosey McIntosh and similar sorts and almost bare of the mid- and late winter sorts, all of which result in lowered per capita consumption.

Other Topics Discussed

In addition to the above items which are presented in detail in this article, the original manuscript discusses other topics of interest to fruit growers. The following are a few of these subjects: orchard management and nutritional problems, fruit processing, insect and disease control, blossom-thinning sprays and harvest sprays. For full coverage of these topics consult the Proceedings of the American Pomological Society

