Prospects for Brambles in the Nursery Industry

RICHARD H. CONVERSE*

Nurserymen have traditionally offered an assortment of raspberries and blackberries in their catalogs. The pretty pictures in the catalog; the pleasing prospect of quality fruit; the steady stream of new varieties; and the relative ease of handling the dormant plants, have all combined to assure the place of the popular brambles in the nursery trade.

Since Depression days, however, brambles have been in the doldrums as far as national commercial acreage is concerned. For instance, there are now only 24,000 acres of raspberries throughout the USA, or about enough to allow each person a single 4-ounce serving once a year. Blackberry acreage is also limited.

National average grower prices for raspberries (27 cents per quart) compare well with those for strawberries (28 cents per quart). Why then are raspberries less popular than strawberries? One major reason is that raspberry plants are simply not productive enough to be profitable. The national fruit tonnage for raspberries is only 42 percent as much per acre as that for strawberries.

In order to increase commercial bramble production we must find ways to make them much more productive. What can be done to increase yield for raspberries and blackberries? One major recent improvement is the devleopment and release of mosaic-free stocks of brambles to nurserymen.

Virus diseases play a leading role among the many factors that decrease yield of raspberries. The raspberry mosaic virus complex is one of the most damaging. It can be spread from plant to plant by the large raspberry aphid, but it is usually already present in planting stock that the grower receives from the nursery. Once raspberry plants are infected, they do not recover, but frequently the mosaic infection becomes hidden or latent. Although these plants may appear healthy, they are weakened and produce fewer canes and less fruit than mosaic-free stock of the same variety. Also, fruit quality is lowered. For the variety Newburgh, we found that mosaic-free plants produced twice the number of canes and twice the weight of fruit of ordinary mosaic-infected commercial Newburgh plants. The accompanying photograph from a demonstration plot in a commercial nursery in New York tell the story for mosaic-free versus commercial, mosaic-infected Latham red raspberry. The Latham stock grown from indexed mosaic-free sources produced two and one-half times more canes per row than the standard commercial Latham stock which was completely infected.

Nurserymen and State Department of Agriculture inspectors have been aware of the damage caused by raspberry mosaic for many years, and bramble-producing states have tight restrictions on the amount of visible mosaic that is permitted in certified plantings. Nurserymen and state inspectors have cooperated well in intensive efforts to rogue out mosaic, but such practices have unfortunately failed to control this disease because of the tremendous amount of latent mosaic that has gone undetected. The New York State Department of Agriculture has recently announced that it will no longer certify the variety Latham unless it is grown from in-

*Research Plant Pathologist, Crops Research Division, Agr. Res. Service, U. S. Dept. of Agr., Beltsville, Maryland 20705.

dexed stock. This laudable step forward should help restore the inherent vigor of this established old variety in stocks which the public buys.

Research work has now provided us with a technique for detecting latent raspberry mosaic. Leaves from suspected brambles are grafted into petioles of a Chinese bramble, *Rubus henryi,* which is very sensitive to the mosaic viruses. On the basis of this indexing procedure, stocks of most of the leading raspberry and blackberry varieties in the United States have been found that are free from raspberry mosaic.

California, Maryland, Michigan, New York, Ohio, Vermont, and Washington State Agricultural Experiment Stations and State Departments of Agriculture have assembled collections of locally adapted, mosaic-free bramble varieties. Similar work is going on in some of the Canadian provinces. Basic stocks are held in insect-proof screenhouses to prevent aphid transmission of mosaic and some other viruses; and mosaic-free stocks are distributed to nurserymen. In Maryland, Michigan, and Vermont limted quantities of certain raspberry varieties grown from indexed sources can now be purchased by nurserymen and growers. As the demand for mosaic-free plants grows, the volume of such stocks is expected to increase. Other states will probably then adopt similar programs.

The increased plant production of essentially virus-free strawberry plants reduced the cost of production per plant for strawberry nurserymen. The preference of growers for essentially virus-free strawberry plants is well known. We anticipate a similar trend in the bramble trade. It is likely that

Figure 1. William Runkle, New York State Department of Agriculture inspector, examines mosaic-free Latham stock in a New York nursery, during the second season after planting.

reduced cost of production and grower preference for mosaic-free brambles will become increasingly important factors in bramble plant merchandising. We therefore encourage nurserymen who now grow brambles, or who contemplate growing them, to consult with their State Agricultural Experiment Stations concerning production of mosaic-free brambles.

The question may well be asked: "How long will mosaic-free stocks from indexed sources remain mosaic-free and vigorous in a nursery?" We have reason to be optimistic, because in a recent study, the USDA grew 12 mosaic-free raspberry varieties in 14 field locations in 9 eastern states for 1 to 2 years. No mosaic was detected in the stocks in nine of these locations at the end of the test, and the overall mosaic infection rate was about 3 percent. The rate of infection differed among varieties. We expect the infection rate to be prohibitively high in certain locations if mosaic-free raspberries are planted near infected material.

For nurserymen interested in growing essentially mosaic-free brambles the following general 4-point program is suggested:

1. Choose a few of the leading bramble varieties popular in your area, and find a basic source of indexed stock through your Agricultural Experiment Station.

2. Select nursery land well adapted to growing bramble plants and isolated from commercial brambles, particularly red raspberries. Isolation of 1000 feet has been used successfully in several pilot trials in the eastern United States. Destroy all the wild brambles around the planting, particularly wild red and black raspberries and wineberries. Fumigation of the land is advisable to control meadow and dagger nematodes, to promote vigorous root growth, and to eliminate potential virus-carrying nematodes.

3. Grow the planting for plants only, and do not fruit it. In this way the plants can be pruned for maximum sucker or tip production. A good systemic insecticide recommended by your county agent can be used to reduce chances of the spreading of mosaic by aphids.

4. Rogue off-type plants routinely, but plan to replace the stock after several years when plant production begins to decline. Inexpensive portable 12 x 24 foot screenhouses in which mosaic-free mother plants can be maintained for propagation are now on the market for about $200. Ultimately, however, a continuing source of indexed mother plants, and a service to index sample plants should be made available to the nurseryman from his State Agricultural Experiment Station or State Department of Agriculture.

Apple Variety Trends in Mid-Atlantic States

The York Imperial apple continues as the leading variety in the Middle Atlantic region, according to A. H. Thompson, of the University of Maryland, in Fruit Notes of the University of Massachusetts. Delicious is also being planted heavily. The outstanding non-spur sports of Delicious in this area are Ryan Red, Topred, Red Prince, Red Queen and Hi-Early. The best spur-types, Starkrimson, Redspur and Wellspur, show more chlorophyll than the non-spur sports, and remain inferior in quality until Christmas or later. There is also a great interest in Golden Delicious in this region.