

Minnesota Nurserymen's newsletter

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• Agricultural Extension Service
• Horticulture Department

In Cooperation with
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• Minnesota State Horticultural Society



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VIRUS DISEASES AFFECTING PRUNUS NURSERY STOCK

William Bulger
Minnesota Department of Agriculture

Nurserymen are seriously affected by stone fruit virus diseases which do not produce recognizable symptoms on infected one and two-year Prunus. The greatest increase of hidden, masked, or latent type virus diseases takes place in nurseries during propagation. Every bud or cutting taken from a virus diseased tree usually contains the virus, and thus it produces a diseased tree.

Viruses commonly cause a decrease in stand and growth rate or size of those trees surviving. As reduction in stand is a complete loss and as nursery stock is marketed on size grade, the direct loss to propagators can be realized. However, by eliminating these diseases from parent trees, an economically possible increase both in bud take and growth rate of nursery stock can be expected.

Some regulations have resulted against marketing and distribution of Prunus nursery stock. Such actions began in the important peach and cherry producing regions where drastic losses occurred due to the introduction and spread of new virus diseases. This has prompted the start of certification programs.

Visual inspection procedures can be employed to detect virus diseases which always express recognizable symptoms. But inspection alone is not sufficient to determine the presence of all viruses affecting stone fruits. In some species and varieties of Prunus, the symptoms of certain virus diseases are masked completely, while on others, symptoms appear only during the year of infection or the following year. Also, symptoms which are expressed every growing season may be masked due to environmental or other external influences. Yet the virus is continually present in such affected trees and propagating wood taken from them contains the diseases.

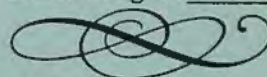
The presence or absence of these masked, hidden, or latent viruses can be determined by a technique known as indexing. Wood from Prunus trees to be tested or indexed is grafted into certain indicator host plants which reliably express symptoms of the virus diseases to be eliminated. If no symptoms appear on the indicators, the original tree may be assumed free from the virus in question and wood from it may be used for further propagation.

The Division of Plant Industry has begun a certification program to eliminate virus diseases from trees of the Prunus species which are propagated in

Minnesota nurseries. This work has been conducted through a Federal Agricultural Marketing Act service project in cooperation with the State Department of Agriculture, Dairy and Food. Associated studies have been carried out by the Department of Plant Pathology at the University of Minnesota, with the Department of Horticulture assisting.

Virus disease-free sources have now been established in five cooperating nurseries. Trees selected for these propagation blocks have been observed during at least two growing seasons for visible symptoms of diseases and every individual tree has been indexed at least three times into reliable index host plants. As soon as a parent tree was found to contain a virus disease or was apparently off-type, it was rogued from the budwood block. It can be reasonably assumed that the parent trees now remaining in these blocks are free from presently known virus diseases. Subsequent checks will be made at periodic intervals to be sure no new infections have occurred.

While latent type viruses do not appear to be as destructive to trees as certain other diseases, the avoidance of direct losses, which propagators take unknowingly when using diseased wood, should more than pay for the work of an improvement program. The increased value from the use of virus disease-free material is already noticeable in some nurseries. Elimination of latent viruses will help to improve the production and marketing of Prunus nursery stock.



SMALL FRUITS ARE POPULAR
HOME GARDEN SUBJECTS
E. T. Andersen, Instructor
Department of Horticulture
University of Minnesota

With the spring planting season close at hand, interest in gardening generally becomes sharp and brisk. Small fruits are favorite subjects in most home gardens and rightly deserve to be. These plants can be extremely productive considering the small amount of space they require. They are perennial in nature yet do not require a long time to come to fruiting age. They are relatively easy to grow and well adapted to northern culture; and above all, produce some of the most delicious of all dessert fruits. In addition, fruits of most of them are extremely perishable and quality is best when they are picked ripe and eaten within a short time.

Planting time naturally poses the problem of choice of suitable varieties. The trade offers many varieties of most of the small fruits, each one having

merit in at least some section of the country. This brief review is intended to pin-point a few of the varieties which have been particularly successful in Minnesota; no doubt many others have been equally successful in some instances.

Strawberries

Among June-bearing types, the two old varieties Premier and Dunlap continue to give good yields under most conditions. Dunlap is very prolific in producing plants and fruit. The fruit is of fine quality when in prime condition. Its weaknesses include a tendency to make too many runners, thus overcrowding itself, and to have soft berries which break down soon after ripening. In the home garden neither of these faults needs to be serious.

Premier is better suited to commercial use than Dunlap, having a relatively firm berry.

Of a large number of newer varieties a few appear promising and deserve wider trial. Robinson is a heavy yielder and produces berries which are large and bright red. The plants are vigorous and make runners freely. This has become a popular commercial berry in many sections. Sparkle, as the name implies, is particularly bright and attractive and produces a firm berry which stands up well after picking. It has performed well at the University Fruit Breeding Farm at Excelsior. Catskill has likewise performed well at the Fruit Breeding Farm, is a very heavy yielder, but has not quite as attractive a berry as Sparkle. Pocahontas, introduced in 1953 by the United States Department of Agriculture, is noted for exceptional yielding ability under many conditions; and Jerseybelle, recently from New Jersey, for its very large size and top quality fruit.

Everbearing strawberry varieties are of much interest to the home gardener as they provide fresh fruit over a long period of time. Gem and its daughter variety Superfection, which are very much alike, are widely grown, popular, and generally adopted over the entire state. They are more productive than most other everbearers, but the berries tend to be somewhat acid and soft in texture.

Red Rich has become very popular in home gardens because of its exceptionally highly-flavored, aromatic fruit. The variety has been a somewhat unreliable performer, being exceptionally good in some cases and in others, without apparent reason, exceptionally poor. Cyclamen mites have in many cases caused serious damage to plantings of this variety and must be controlled for successful culture. Kelthane used pre-bloom has been very effective. The variety also seems to be particularly sensitive to soils of low fertility or low in organic matter.

The older variety Wayzata is still rated of top quality, but makes few runners and may now be hard to obtain. Evermore, introduced by the University Fruit Breeding Farm, has given good performance in the northern and western parts of the state.

Virus Diseases.

It is well to note that strawberries are subject to several virus diseases which cause loss of vigor and fruitfulness in the plants. Wherever possible obtain

plants which are certified as being substantially free of virus diseases. Your own old strawberry bed or your neighbors is likely to be infected. It rarely pays to take chances.

Raspberries

Several types of this fine home garden fruit are available. By far the most widely grown and popular of these in the state is the common red raspberry. Black raspberries or "blackcaps" as they are frequently called and purple raspberries have not as yet attained high popularity. Of the reds the two reliable old varieties from the University Fruit Breeding Farm, Latham and Chief, still rate high in popularity. Chief is very hardy and productive and is recommended for use particularly in northern regions. Latham has larger fruits and is very productive. It is planted in nearly all areas of the state and in many other states as well. Newburgh does not appear to be as widely adapted as Latham, but in areas of heavy rich soil may outyield most varieties.

Antietam, a fairly recent variety from the University of Maryland, has performed well at the University Fruit Breeding Farm.

Considerable interest has developed in fall fruiting varieties of raspberries. Indian Summer is too late under Minnesota conditions, but produces a good early summer crop. Durham is the earliest autumn fruiting variety tested by the University; ripe fruit was produced in abundance from August 22 until freeze-up in 1957. Fruit is rather small and acid, but nevertheless pleasant and attractive. September produces larger and sweeter berries, but is later and not as prolific.

Among black raspberries, Bristol has performed somewhat better than Cumberland and Morrison producing fruits a little larger and a little less seedy. Anthracnose disease, which was extremely destructive in 1957, was not as severe on Bristol as on most other varieties. Black Hawk, a new variety from Iowa, is promising and produces fruit which is equal to, or better than, Bristol in size and quality.

Purple raspberries are extremely vigorous and heavy yielding. Fruits are generally large and of fine flavor. Sodus is widely adapted and performs well. Marion produces a fruit which is somewhat brighter and larger than Sodus and deserves a trial.

Gooseberries

These bush fruits are reliable and productive and particularly useful for processing into jams or for pies. Como and Pixwell are the varieties generally grown in the state and are usually satisfactory. Welcome is a new variety named in 1957 by the Minnesota Fruit Breeding Farm which promises to be an improvement over these two. The fruit size is larger than either of the preceding varieties and it is a pleasing red color. It is particularly noted for its ease of picking because of its almost complete freedom from objectionable spines.

Red Currants

Like the gooseberries, red currants are reliable and fine fruits for processing into jams or jellies.

The variety Red Lake has proven itself adaptable in all areas of the state and in much of Canada. No other variety equals it in cluster size and general performance. Viking is the only red currant resistant to white pine blister rust and may be of value in areas where white pines are important trees. Black currants have not been planted because of their high susceptibility to this disease. A new variety, Consort, introduced by the Canadian Experimental Farm, Ottawa, Ontario, is immune to this disease and may be of interest on a trial basis in the state. Before planting gooseberries or currants in the white pine area of the state, it is necessary to obtain a permit from the Department of Conservation, St. Paul.

Grapes

These interesting fruits should not be overlooked as home garden subjects. Most varieties are not entirely hardy in Minnesota, but many can be cultured by giving them winter protection. Several varieties of blue grapes are recommended for trial. Of these Beta is the hardiest and can be grown in nearly all areas without winter covering. It is also smaller in fruit size and more acid than the other varieties. Bluebell, Moore's Early, Worden, Fredonia and Concord are generally hardy without protection in favored areas in the southern portion of the state. Bluebell is hardy in central areas as well.

Niagara, Portland and Moonbeam are green or white grapes worthy of trial with Moonbeam being the hardiest of the three. The two former should be planted in all areas of the state. Red Amber is probably one of the most satisfactory varieties for Minnesota. Introduced by the University of Minnesota in 1944, it is one of the most reliable, productive, and hardy of the grapes recommended in Minnesota. Fruits are sweet, aromatic and pleasant. This variety should prove popular in home gardens in all areas, but growers should plan to give it protection in central and northern sections of the state.



JAPANESE BEETLE THREAT

Walter P. Trampe
Minnesota Department of Agriculture

Many problems of direct concern to the nurseries of Minnesota were discussed at the meeting of the Central Plant Protection Board held at the Allerton Hotel, Chicago, Illinois, February 24-27. This conference was attended by Wm. Anderson, the Acting Director of the Division of Plant Industry, and the writer.

Of all the threats to the nurseries of Minnesota, none approaches the danger imposed by the Japanese beetle. The last issue of the Newsletter carried a brief reference to this subject, however, it is difficult to refrain from elaborating on this matter after hearing, first hand, how devastating this pest can be. Present control measures in infested areas, which are not under quarantine, have been losing ground. Areas now under quarantine have been resigned, for the present time, to the pest.

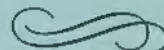
In other words, the authorities in those areas have said in effect that it is impossible to eradicate the insect and that the federal government will try to keep

the beetle from spreading beyond the quarantine lines by taking certain precautionary measures such as restricting the movement of nursery stock, fumigation or other treatment of plant products moving out and making many other requirements which could become very difficult for the nurseryman. The implication of such action to nurserymen and other agricultural interests in Minnesota could in some cases become catastrophic. Any practical preventive or delaying measure which could be applied now would certainly merit the blessing of every nurseryman in the state.

The federal government has set aside slightly over a half million dollars for its share of control measures to be applied this year. Additional funds are spent for control by state and local agencies. The annual losses due to the ravages of the pest are not known, however, the figure runs well into the millions of dollars over the entire infested area. Regardless of what it is now, it will be multiplied if the infested area spreads through the midwest.

The plan initiated by the Central Plant Protection Board would enlist, if possible, a concerted effort by all agricultural and horticultural interests in the 13 Central Plant Board states, Michigan, Illinois, Iowa, Kentucky, Kansas, North Dakota, South Dakota, Minnesota, Wisconsin, Nebraska, Ohio, Indiana and Missouri. To outline the plan briefly, an immediate study will be made to determine the cost of treatment for all infested areas beyond the limits of the quarantine. The states containing these infestations have indicated that they will try to pay for one-half of the cost of treatment required to eliminate these areas. An attempt will be made to have the federal government pay the remaining half of the cost. The total cost of the treatment will approximate \$2,000,000.00.

It will require the support of everyone concerned to obtain these funds from the federal government at this time. No group has more at stake in this matter than the nurserymen. Minnesota as a state has a vital interest; further support for this plan may be requested in the near future.



Editors Comments
R. J. Stadtherr

COME TO HORTICULTURE SHORT COURSE

The University of Minnesota's annual horticulture short course, planned especially for home gardeners, will be held on the St. Paul Campus March 27 and 28, J. O. Christianson, director of Agricultural short courses, announced today.

Separate sessions will be devoted to vegetable gardening, home fruit growing, commercial fruit growing and ornamental horticulture. Because of the interest in ornamental horticulture and in commercial fruit growing, a whole day's program will be devoted to each of these areas, according to R. E. Widmer, assistant professor of horticulture and program chairman for the course.

Members of the University horticulture, entomology and plant pathology staffs and representatives from industry will be featured speakers for the two-day event.

Nurserymen are urged to tell their customers to attend these sessions. Remember the more you interest people in plants the greater your potential market!

ROSE GROWERS DAY

The seventeenth Annual Rose Growers Day will be held June 20, at the St. Paul Campus, University of Minnesota. More information will be given on the program in your next newsletter.

The Minnesota Rose society will hold their annual rose show on June 21 and 22 at the American Hardware Mutual Insurance Company building.

UNIVERSITY GETS ARBORETUM LAND

G. Victor Lowrie, president of the Minnesota State Horticultural Society, presented the deed to 160 acres of ideal land for the proposed landscape arboretum. Presentation of the deed plus a check from the society of \$25,000 for initial arboretum development was made on February 6th in Coffman Memorial Union at the University of Minnesota. Members of the Board of Regents and University administration and officers of the Horticultural Society attended the ceremony.

The arboretum will be devoted to research in testing and developing hardy ornamentals for landscaping home grounds in Minnesota. Purpose of this research will be to increase many times the limited number of selections that will withstand the severe climatic conditions of this area. Planted in a natural setting, the arboretum will give home owners, garden lovers, and nurserymen an opportunity to see plant materials in natural landscape groupings, as well as the variety of plants available for landscaping. New plants will be shown to acquaint the general public to these materials.

Located on Highway 5, a mile from the University Fruit Breeding Farm near Excelsior, the landscape arboretum consists of 160 acres of woodland, lakes and open fields to be developed by University horticulturists. A tract of nearly 100 acres of timberland has nearly every type of tree and shrub native to this area. Fifty acres of open, rolling land will make available immediately a section for experimental plantings.

While the existing trees, native shrubs and wild flowers will provide a beginning to the landscape arboretum program, eventually approximately 3,000 species and varieties of shrubs and trees will be planted, according to Leon C. Snyder, head of the University department of horticulture, who will be in charge. The high land, as well as the low and marsh land, will furnish the types of soils and natural habitat for a large variety of plants.

Walks and roads, flanked by plantings, will lead through and around the arboretum to facilitate observation by the public. Plans call for a headquarters building for administration purposes to be constructed on a hilltop with a view of Lake Minnewashta in the distance.

A new era in the development of Minnesota's ornamental horticulture may well be in its beginning as the University of Minnesota landscape arboretum becomes a reality, Snyder says.

ARCHITECTURE AND LANDSCAPE DESIGN RELATIONSHIPS

Mr. L. Morgan Yost, landscape architect, Kenilworth, Ill. presented an interesting well-illustrated discussion on the present trends in landscape design at the 32nd annual Minnesota Nurserymen's Association Convention.

Gardens in the past were considered a luxury and were places where plant collections were grown. They were more a show place not a place for enjoyment. Today's gardens are an integral part of the environment—an extension of the home or building. In northern areas, growing seasons are short; time is shorter thus every aspect of the changing seasons should be exploited. Winter beauty from different textures and shapes plus lighting effects with snow can create a beautiful scene.

Changes which have occurred in the past 40 years include placement of the service area facing the street with the living areas and gardens away from public view. Picture windows are placed to the side and rear of the homes to make the garden a continuation of the house. Bedrooms should have their own private gardens.

Planning the entire area prior to building is extremely important. The boundaries of the lot and beyond should be considered. Protection from sun and wind as well as neighboring buildings must be considered. Paved terraces should not be placed in front of west or south windows for the heat is reflected into the house. Slit windows were suggested for these exposures. Larger windows for the east and north exposures would allow sunlight to enter to make the rooms more cheerful. Windows on the west side would have to be shaded during most of the day.

Gardens and landscaped areas should be planned for easier care with high maintenance shrubs and trees at a minimum: Clipped formal hedges and constant edging are to be avoided. The cooperation between landscape architects and nurserymen is needed in obtaining the maximum effect from plant materials. The use of retaining walls, raised flower beds, sound barriers and changes in levels can be used effectively in making an area more livable and eye appealing.

Mr. Yost finished his discussion by showing colored slides to emphasize the salient points of his talk. The blending of house with its environment into a closely-knit unit results in the most functional, yet beautiful home.

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