

## **PROGRAM STARTED TO OBTAIN VIRUS-FREE ROSE STOCKS**

Propagation procedures used for rose plants have been an ideal source for a new variety to become infected with one or more viruses before it has been introduced. Most rootstocks are increased by cuttings. When a source of cutting material becomes infected with a virus, all rose plants propagated on that source also will become infected. For example, many clones of Multiflora and Manetti rootstocks have become infected and most or all the roots of the Dr. Huey variety which have been used for greenhouse roses are virus infected.

Testing several rose varieties for virus has shown that one or more viruses may be present. The common virus in most varieties is the ringspot type generally found in fruit trees. This virus can be detected by T-budding rose buds into Shiro-fugen flowering cherry.

Many virus symptoms show on rose plants. Often, only one or more leaves may show patterns caused by a virus. However, many of the leaves which look normal also carry a virus. Virus patterns may appear as a network of yellow veins, yellow or white bands, white or golden blotches, or various abnormal growth patterns. Growth is reduced, branches are shorter, and fewer flowers develop. To a nurseryman, a poor stand of buds means less plants to sell and virus-infected plants will not be as large as normal plants.

The first approach to the rose virus problem will be to find or develop virus-free rootstocks. When these rootstocks become available, new seedling varieties should be increased on their roots.

Attempts also will be made to find a virus-free plant of all desirable varieties now used in the trade. Suitable index plants will have to be found that will indicate the presence of all rose viruses that may not express virus symptoms.

When a variety has been found wherein all plants are infected, attempts will be made to obtain a virus-free plant by heat treatment. Preliminary experiments have shown that growing such a plant in a room held at 98° F. will inactivate the virus in some parts of the plant. By this method, occasional buds from the heat-treated plant grafted to virus-free root varieties will produce virus-free stock for propagation.

Preliminary studies already have been made on rose viruses. The viruses present and methods of obtaining virus-free propagation material also have been studied.

Some clones of Multiflora rootstock, and some Manetti rootstock appear to be virus free. The variety Dr. Huey has been uniformly virus infected, but the California Experiment Station has obtained virus-free plants of this variety by the use of heat treatments. Desirable virus-infected clones of Multiflora will be heat treated if no virus-free plants are found.

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