

NECROTIC FLECK DISEASE OF EASTER LILIES IN CONNECTICUT

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Easter lilies grown commercially in Connecticut and showing severe virus-induced disease symptoms were observed in both 1977 and 1978. This report is to confirm that the symptoms were of necrotic fleck disease and to give growers basic information about this disease. Most commercial Easter lilies are usually infected with lily symptomless virus (LSV) which, as its name suggests, has little visible effect on its host. It is what is known as a latent virus. It does, however, predispose the Easter lily to necrotic fleck, a serious disease that develops when cucumber mosaic virus (CMV) infects plants already infected with LSV.

Leaves collected in 1977 with necrotic fleck symptoms are shown in Figure 1. The most striking features of the disease are stunting, leaf twist-



Figure 1. Leaves from an Easter lily with necrotic fleck disease.

ing, curling of leaf margins and white or brown flecks of dead tissue scattered over the leaf surface. Virus particles purified from leaves of such plants are shown in Figure 2. Two types of particles were detected; those that were 630 nm long, and rod shaped (LSV), and those that were small and spherical (CMV). The presence of CMV was confirmed by serology. Both LSV and CMV were detected in samples purified from each of eight plants showing necrotic fleck symptoms provided by three different commercial growers. Ten plants which did not show necrotic fleck symptoms were also tested and all were found to contain LSV, but not CMV.

These results confirm that "healthy" lilies grown in Connecticut are probably latently infected with LSV and that the presence of CMV will

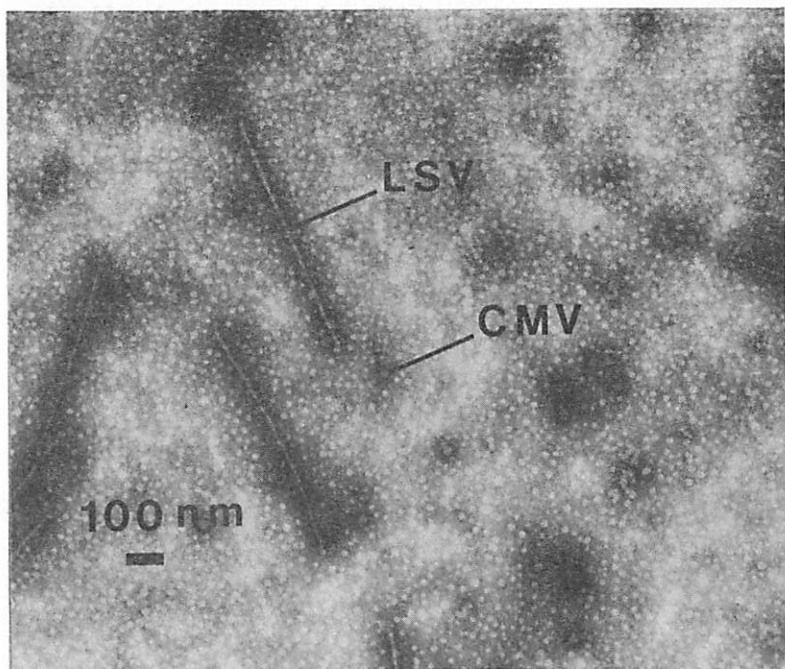


Figure 2. Virus particles of lily symptomless virus (LSV) and cucumber mosaic virus (CMV) purified from leaves of Easter lilies with necrotic fleck disease.

cause these plants to develop symptoms of necrotic fleck disease. Growers can minimize this disease by being aware of the following information.

Sources of LSV. Infected bulbs are the source of the LSV component of necrotic fleck disease. Successful programs are underway in Oregon and elsewhere to free Easter lilies of LSV and other viruses by heat therapy and meristem tip culture.

Sources of CMV. The source of CMV is less clear because it could be from either infected bulbs or other greenhouse plants. Symptomless but infected greenhouse weeds can also be a source of CMV, and chickweed can be a permanent reservoir since the virus is seed-transmitted in this plant.

Vectors of CMV. Aphids are the important and efficient vectors of CMV. They can spread CMV to uninfected plants from lilies and other greenhouse plants and weeds infected with the virus.

The use of virus-free bulbs, separation of Easter lilies from other plants, removal of plants with symptoms from the house, and attention to insect and weed control should minimize necrotic fleck disease.