Colorado State Flower Growers Association

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ROSE CROWN CANKER

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During the fall of 1949 crown canker was observed on roses in several rose benches in the Denver area. Infection was quite general throughout the benches which indicated that it had been present for several months. However, because the disease was located at the root crown the cankers were often covered by mulch and remained unobserved by growers.

Isolations made from these infected benches always yielded the fungus agent, Cylindrocladium scoparium . This fungus produces numerous spores and is easily disseminated by tools, pots, hoses, and workers' hands and on clothing. Preliminary studies with this fungus at Colorado A and M College have shown that care must be taken to avoid the spreading of the fungus.

As Cylindrocladium may be carried in active, yet unexpressed infection in scions the recent epidemic of the disease may have been the result of certain rose importations. However, the disease was not observed soon enough to detect the original source.

The causal fungus is a typical soil-borne organism, and its spread depends partly on its rate of growth of the fungus in the soil. Being soil-borne, the fungus infects any underground portion of the plant, especially the root crown. This does not exclude the above-ground portions, however, because the fungus may enter the stem through any wound which may be splashed from the indiscriminate watering of infested soil.

Since the underground symptoms are so often hidden by mulch, one of the first observable signs of infection is a slight yellowing of the leaves. This yellowing of the leaves intensifies with the increased severity of the disease. Suckering from diseased roots is very characteristic. They have a spindling type of growth concurrent with an intense yellow mottling of stunted leaves.

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Plants with such symptoms should be examined for the presence of cankers. At, or just beneath the ground level, cracked cankers can be found which may or may not be black and water-soaked. The infected portion is characteristically punky.

Death of the infected plants may be slow. However, the plants drop off in production very noticeably, yielding poor and few blossoms. No fertilizer treatment has been known to assist in the recovery of infected plants from the effects of the disease.

It was believed that a change of the soil pH may retard infection. However, tests with isolates of Cylindrocladium obtained in Denver, indicated that the fungus has a comparatively wide range of pH-tolerance, growing equally well at pH 5.6 and 7.8. Moreover, it was observed that at least two strains of the organism exist. One strain thrives better on a high-nitrate medium, while the other does well on a low-nitrate medium.

In view of these observations, the most successful control measures should incorporate known sanitation measures. Steam sterilization of soil in which diseased plants have grown is imperative. Benches, pots, and tools should be cleaned thoroughly and disinfected either with formaldehyde, steam, or boiling water. Imported scions should be inspected closely for any slight discoloration of the bark at the root crown. If such scions are found, they should be carefully examined by laboratory technique methods, to determine the presence of Cylindrocladium. Careful inspection of imported scions and sound sanitation should eliminate this disease from the greenhouse.