Hibiscus collar rot

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Cover Page Footnote
Grateful acknowledgment is made to Dr. G. M. Waterhouse of the Commonwealth Mycological Institute, Kew, for identifying the causal organism.
Flowering hibiscus have been one of the most popular ornamentals in the home garden for several years. However since about 1959, many home gardeners have been disappointed to see their hibiscus attacked and destroyed by a collar rot. This disease, which is new in Western Australia, has been most destructive on the popular Apple Blossom variety.

Hibiscus collar rot is caused by the fungus *Phytophthora parasitica* Dastur. This organism was first isolated and identified in 1961. However several records of collar rot before then were probably due to the same organism.

**SYMPTOMS**

The first noticeable symptom of this disease is a loss of leaf colour suggestive of malnutrition. The plant may stay in this unhealthy state for several days and then suddenly wilt and die.

A characteristic watersoaked, slimy brown area will be found in the collar and root region when the plant is removed from the soil. The rotten bark around the collar has a pungent odour. If the water soaked area is allowed to dry out the outer layers of bark will peel off as a papery layer. The bark which is left has a characteristic stringy appearance. (Shown in the picture.)

**ORIGIN AND SPREAD**

The origin of the disease is obscure. Apparently it first appeared in about 1959 and has since proved troublesome mainly in young hibiscus.

The disease may start by contact between healthy and diseased roots, or contaminated soil, and in row plantings where plants are closely spaced the disease may spread rapidly from an infection centre.

When an infected plant is replaced with another hibiscus, death of the replant often occurs either the same year or during the next summer.
**Heat and Moisture**

The fungus which causes collar rot becomes most active with high soil temperatures and abundant soil moisture. Consequently, death of affected plants occurs most often during the hot summer and especially in over-watered gardens.

Heavy mulching during the summer, especially when in contact with the stem of the plant, also produces wet and humid conditions around the base of the plant which are ideal for the fungus.

Other factors which encourage this hibiscus disease include planting too deep,
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root injuries caused by careless cultivation, or the constriction of roots of pot-bound plants.

CONTROL MEASURES

**In the Nursery**
Where collar rot is established in the nursery, all soil used for propagation and potting should be disinfected with formalin, methyl bromide or one of the other soil disinfectants.

**In the Home Garden**
1. **Remove and Destroy Diseased Plants:** It has been found that once the disease is advanced far enough for the plant to show symptoms nothing can be done to stop the plant dying. The diseased plant should be removed along with as many roots as possible and burnt. Soil around the diseased plant should be removed and replaced with clean soil.

2. **Use of Resistant Plants:** Collar rot has not been found yet on any other ornamental than hibiscus in Western Australia. For this reason it is a good plan to replace diseased hibiscus with some other type of shrub. If it is desired to grow another hibiscus, alternative varieties to Apple Blossom and Wilders White should be considered as these two varieties seem the most susceptible to attack.
3. **Soil Disinfection:** If another hibiscus is to be used to replace one killed by collar rot, the soil should be disinfected.

A Thiram soil drench can be applied immediately after planting out. One ounce of Thiram powder in three or four gallons of water is enough for one plant. For easier application make a saucer-shaped depression about three feet wide around the base of the plant to hold the disinfectant solution.

The replant should be treated several times at intervals of about three weeks with the same amount of Thiram solution.

4. **Cultural Practices:**
   - The collar rot fungus likes heat and water—so avoid over-watering during the summer. Evening watering should be avoided also as the plant and surface soil will stay wet all night.
   - If a mulch is used be sure that it is more than six inches away from the stem of the plant so that wet conditions around the base will be avoided.
   - Care should be taken to make sure the young shrub is not planted too deep. Plant it at the same soil level as in the nurseryman's pot.
   - Care should be taken to prevent basal injuries to the shrub. Avoid pot-bound plants—do not buy big plants in small pots.

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**Reference**