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Rhizopus Rot of Jackfruit

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The plant genus *Artocarpus* comprises roughly 50 species of tropical trees native to the Pacific and South and Southeast Asia, several of which produce edible fruit. Jackfruit, *Artocarpus heterophyllus*, is a popular garden species prized for its edible flowers, fruit, and seeds for fresh consumption or cooking. Jackfruit trees can reach over 60 ft in height and bear fruit that can be 2 feet or more long and weigh as much as 70 pounds.

Rhizopus rot is a common fungal disease of jackfruit flowers and fruit. Rot is more likely to occur in high-rainfall areas or during and after stormy periods. When warm, humid, wet weather coincides with the flowering and fruiting season, rhizopus rot can cause total loss of fruit in jackfruit trees.*

Symptoms

At first, soft, watery, brown spots develop on the flowers and fruit. Subsequently, a powdery, fuzzy-looking mass of black spores and white fungal mycelia covers the jackfruit surface. The pathogen engulfs the young fruit, resulting in the characteristic black, rotten, shrunken, and sometimes mummified fruit remains. Fruit symptoms can appear on the tree or can develop on fruit that are in storage or transit.

Cause

Three species of plant-pathogenic fungi of the genus *Rhizopus* can cause this disease in the tropics: *Rhizopus oryzae*, *Rhizopus artocarpi*, and *Rhizopus stolonifer*. No

Left: a healthy, maturing jackfruit; center and right: young jackfruits with rhizopus rot.

*According to observations by personnel at the UH-CTAHR Agricultural Diagnostic Service Center.

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jackfruit varieties are reported to have significant resistance to the disease.

Epidemiology

Warm, humid, rainy conditions favor the development of rhizopus rot. Wind, rain, and insects dislodge and spread the tiny fungal spores. When deposited on moist fruit surfaces, the spores germinate and infective mycelia grow into the tissues. The infection produces a layer of black spores on the fruit surface to start secondary cycles of infection and disease. Although wounds can predispose the fruit to infection, unwounded flowers and young fruit are also susceptible. *Rhizopus* can survive on decaying plant litter or in the soil to initiate new infections.

Management

Prune the tree to encourage good ventilation and to reduce relative humidity in the canopy. Remove and destroy diseased fruit from trees and the ground. Clean up decaying organic debris within and around the tree. Ensure that water does not pond around the tree's root zone. Control weeds around young trees. Intercrop jackfruit with trees that are not susceptible to infection by *Rhizopus*. Keep ripe fruit from contact with the soil or decaying organic material. Avoid wounding the fruit. Wash fruit after harvest in clean water and dry thoroughly before packing or transporting. Do not pack fruit with symptoms—destroy them. Avoid storing fruit after harvest in hot, poorly ventilated containers. Where disease is severe, protect fruit with periodic sprays of copper fungicides or other products registered for use on jackfruit in Hawaii.

References

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