

# LOUISIANA PLANT PATHOLOGY

DISEASE IDENTIFICATION AND MANAGEMENT SERIES

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## Sclerotial Blight and Circular Spot of Sweet Potato

*Sclerotium rolfsii* Sacc.

*Sclerotium rolfsii* is a soilborne fungus that causes southern blight on a wide variety of plants. It also causes two distinctly different diseases on sweet potatoes, sclerotial blight and circular spot. These diseases differ both in terms of symptoms and the stage of plant production when they occur.

**Sclerotial blight** is one of the most common diseases of sweet potatoes in plant beds in Louisiana. This disease – also called southern blight, southern stem rot and bed rot – develops when the pathogen invades the seed roots and the developing sprouts. On the seed roots it causes a soft rot, and when it invades the developing sprouts at the point they emerge from the seed root it causes them to wilt and die. Under humid conditions, the white fungal mycelium can be seen developing from the base of the infected sprouts. The yellow to brown mustard seedlike sclerotia that serve as survival structures are then produced on the mycelium. The disease generally develops as circular areas of affected plants that may be scattered throughout the seed bed. Disease development generally occurs during periods of moisture and high humidity especially when temperatures are warm and plants are stressed. Cultivars vary in their susceptibility to this disease, but even Beauregard, which is considered resistant, succumbs when stressed.

Sclerotial blight is managed using several practices. Use only disease-free roots for seed. Choose only cultivars with some resistance to the disease and avoid those that are known to be extremely susceptible. Choose a well-drained site for the plant bed that does not have a history of the disease or has not been planted with sweet potatoes (or other susceptible crops) for at least 3-4 years. Soil



Fig. 1. Hyphae of *Sclerotium rolfsii* extending from the base of an infected sweet potato sprout.



Fig. 2. Focus of infection of sclerotial blight with hyphae and “mustard seed” sclerotia of *Sclerotium rolfsii* visible on the soil.

fumigation with metam-sodium, Vorlex, methyl bromide or chloropicrin will also aid in reducing inoculum. Treat the seed roots with a fungicide, such as dichloran (Botran), prior to or at planting with sufficient water to assure good coverage of the root surface. If the beds are covered with plastic mulch, punch holes in it to allow adequate ventilation and prevent the buildup of excessive moisture.

**Circular spot** typically develops on storage roots in the field shortly before harvest. Lesions on the roots are circular (1-2 cm in diameter) and are generally very shallow (1-4 mm). The surface of the lesion is dry and brown whereas the decayed tissue below it is yellowish brown. In most instances, lesion development stops as soon as the roots are harvested. In storage, the necrotic surface tissue of the lesion separates from the root following the formation of an abscission zone underneath it.

The occurrence of circular spot is very sporadic, and some cultivars are more susceptible than others. What factors affect incidence of circular spot are not fully known – the development of circular spot is often associated with prolonged periods of flooding in the field, especially when the soil is warm. Under these conditions, the lesions tend to be much wider and deeper, and soft rot may destroy the entire root. The only practices for managing circular spot are to choose cultivars that are more resistant to the disease and to avoid fields with a history of diseases caused by *S. rolfsii*.



Fig. 3. Hyphae and “mustard seed” sclerotia of *Sclerotium rolfsii* on infected sprouts and partial decay of the seed root due to sclerotial blight.



Fig. 4. Circular spot lesions on a mature sweet potato root.

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