PDMG-V3-52

2007 Florida Plant Disease Management Guide: Sweet Potato[1]

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Specific Common Diseases

Black Rot *(Ceratocystis finbriata)*

Symptoms: All underground plant portions are susceptible to this fungus. Disease spread usually occurs in the seedbed as the causal fungus grows from an infected potato into sprouts. Infected sprouts exhibit a small black lesion near the potato. This lesion will enlarge, often up to the soil surface, girdling the sprout and causing leaf yellowing, stunting and finally sprout death. Infected potatoes may or may not exhibit lesions at digging. Spots are blackish in color, slightly sunken and circular. Under favorable storage conditions, lesions enlarge. The fungus can be observed as short, dark bristle-like structures within a 1/2 inch circle in the lesion center. The potato injury may extend to the potato center as black flesh. The fungus will cause the potato to develop a bitter flavor.

Cultural Controls: Plant seedbeds in areas that have not produced sweet potatoes for at least 2 years. Where permanent seedbeds are used, fumigate prior to setting potatoes. Plant only the best, pathogen-free seed potatoes. Dip potatoes in a seed treatment fungicide before planting. After sprouting, clip sprouts about the soil line and reset in new ground or fumigated ground for rooting prior to setting these slips into the field.

Chemical Controls: See PPP-6.

Pox or Soil Rot *(Streptomyces ipomoea)*

Symptoms: Infested plants appear stunted and chlorotic, often in spots in the field. Roots exhibit rotted tips with frequent black lesions. These lesions also occur on the stems. Harvested roots will have black, crusty lesions that will be sunken. Lesions may be in rows on the potatoes and often roots may be misshapen due to the one-sided occurrence of lesions on a root. These injuries do not enlarge in storage.

Cultural Controls: Select fields without a previous pox history. Choose disease-free seed potatoes and plant in a new or fumigated seedbed. Propagate clean slips as explained under the section on Black Rot in a second, clean seedbed. Avoid contamination of clean fields with infested soil carried by equipment and machinery.

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Slightly infested fields should not be limed. Aim for a pH of 5.2 or lower to minimize disease severity. Consider in-row fumigation to reduce disease incidence and severity. Severely infested fields should be rotated out of sweet potatoes for 3-4 years.

Chemical Controls: Same as for Black Rot. See PPP-6.

Rhizopus Soft Rot *(Rhizopus spp.)*

Symptoms: The fungus causes a soft, spongy moist decay in storage or transit. An abundant growth of gray fuzzy mold is usually produced on the surface. When the rotting process is completed, or checked, the parts of the affected potato becomes shrunken, dry and hard.

Cultural Controls: Avoid injuring potatoes at harvest. Wash or dip with an appropriate fungicide. Store or cure under warm moist conditions of 85° F and 90% relative humidity and aeration for 5-7 days. Store potatoes at 55-60° F under aerated conditions of 80-85% relative humidity.

Chemical Controls: See PPP-6.

Scurf *(Monilochaetes infuscans)*

Symptoms: This disease involves only the outer layer of the underground parts of the potato. It does not cause a rot or reduce yield, but it causes a superficial dark discoloration of the skin. The discoloration may be only a few spots, or may cover most of the surface of the potato. The casual fungus can survive in the field or plant bed and usually is worse during wet seasons.

Cultural Controls: Plant only disease-free seed potatoes into new seedbeds or those previously fumigated. Take vine cuttings or cut sprouts above soil line as described for Black Rot to insure disease-free slips to set in the field. Treat both seed-piece and subsequent cuttings with fungicides. Practice crop rotation for 2-3 years where disease has been severe.

Chemical Controls: See PPP-6.

Southern Stem Rot *(Sclerotium rolfsii)*

Symptoms: Plants in beds wilt suddenly and then turn yellow to brown and die. Stems of sprouts will have brown lesions. White fungal mycelia may be present on the lower stem, and surface of the soil or mother roots. Sclerotia that are about the size of cabbage seed form among the mycelia. They are white initially but later they become brown. This disease is likely to be the most severe when the canopy of the crop is dense in the bed.

Cultural Controls: Rotate the sites of the beds. Do not allow bed covers to remain over the bed after emergence.

Surface Rot *(Fusarium oxysporum)*

Symptoms: The fungus produces circular, slightly sunken spots that are lighter in color than the lesions caused by black rot. The lesions are quite shallow. Infection takes place around harvest time and is usually worse in years when harvesting follows a wet period. During storage, moisture escapes through the spots and results in considerable shrinkage and numerous, hard, mummified potatoes.

Cultural Controls: Do not harvest when soil is too wet. Avoid injuries to the potatoes that will provide entrance points for this soilborne fungus. Severely infested fields should be rotated out of sweet potatoes for at least 2-3 years.

Wilt/Stem Rot *(Fusarium oxysporum* f. sp*. batatas)*

Symptoms: The fungus in the vascular tissue causes the plant to wilt, yellow, and stunt. If the attack comes early in the season, the plant may die. The water-conducting tissues of the potato stem turn dark in color, often making the stem appear blue from the outside. Affected stems may crack open. This disease can be carried in or on the seed potatoes and is able to live for long periods in the soil once introduced.

Cultural Controls: Select disease-free seed potatoes for slip production. Use new land or fumigated land for seedbeds. Infested land should be rotated to other crops for 4-5 years. Use resistant varieties.