

Plant Disease Notes

Early Blight of Potato

ANR-1052

Early blight, caused by the fungus *Alternaria solani*, occurs on potatoes wherever they are grown. The disease can damage both potato foliage and tubers. The disease is also a common problem on tomatoes and eggplant in Alabama.

Symptoms. Initial infection usually occurs on the older, lower leaves then progresses up the plant. Lesions first appear as small spots—dry and papery in texture. Lesions become brownish-black and circular as they expand. Older lesions often appear angular in appearance as their margins become limited by leaf veins. Concentric rings of raised and depressed dead/brown leaf tissue give the lesions a “bullseye” appearance. Leaf tissue immediately adjacent to the lesion is usually yellowed. As new lesions develop and older lesions expand, the entire leaf becomes chlorotic (yellow). Leaves eventually turn brown and dry but usually remain attached to the plant.

Tuber lesions are dark, sunken, and circular to irregular in shape, and often are surrounded by a raised, purplish-gray border. The flesh under the lesion is dry, leathery, and usually brown. Tissue in an advanced state of decay is often water-soaked and yellow to greenish-yellow in color. Lesions can increase in size during storage and the tuber may become

shriveled when the disease is severe. Early blight lesions on tubers are not as prone to secondary invasion by other pathogens as with other tuber rot diseases.

Persistence and Transmission.

The early blight fungus overwinters in the field on plant debris from the previous season’s crop. The fungus can also survive on other members (such as weeds) of the potato family. Spores are usually spread by wind and need moisture to infect the leaves. Heavy dews, frequent rains, overhead irrigation, and high humidity favor disease development. Symptoms usually begin to appear on unprotected plants a week or so after flowering. Symptoms are most severe on plants that are weak due to environmental stress, poor nutrition, or on plants already infected with another disease (such as Verticillium wilt).

Tubers become infected as they are lifted through infested soil at harvest. Tuber infection usually occurs through wounds, so immature tubers and tubers of white and red-skinned varieties are more susceptible to the disease. Infection can also occur through natural openings (lenticels), which tend to open when the soil is wet. Digging tubers at least 2 weeks after vine kill allows for proper maturity and skin development and decreases the amount of tuber injury, therefore,

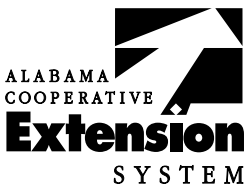
reducing tuber infection. Digging tubers under dry conditions also reduces the risk of infection by the fungus. Tubers harvested under wet conditions should be dried as quickly as possible using force ventilation as soon as they are placed in storage.

Control. Early blight of potato is best controlled by using the following strategies:

- Plant certified, disease-free seed in fertile, well-drained soil.
- A protectant-type fungicide with the active ingredient chlorothalonil, maneb, or macozeb should be applied on a 7- to 10-day spray schedule beginning at bloom, or according to a weather-timed spray schedule (such as Blitecast), and continue until the foliage dies normally or is killed artificially by a “vine-killing” agent.

Intervals between fungicide applications should be shortened in areas where the disease “late blight” is common.

- Eradicate weeds belonging to the potato family in and around the field.
- Wait at least 4 days (preferably 2 weeks) after vine kill before digging potatoes.
- After harvest, plow under all plant debris and volunteer potatoes.
- Follow at least a 3-year rotation between susceptible crops (potato, tomato, eggplant).
- Store lesion-free tubers in a dry, dark, well-ventilated location at 40° F.
- Handle tubers carefully to avoid bruising.



Your Experts for Life

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Use pesticides only according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label.

For more information, call your county Extension office. Look in your telephone directory under your county's name to find the number.

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