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Potato *Eumartii* Wilt

Symptoms, Cause and Control

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Figure 1.—Foliage symptoms of *eumartii* wilt in Russet Burbank variety. The symptoms may show in one stem or the entire plant.

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Eumartii wilt has become of major importance and widespread in Idaho. *Eumartii* wilt has been in Idaho for some time, but has caused little concern or damage. Since 1957, the disease has been so serious that many potatoes are a total loss because of the internal tuber discoloration.

The *Eumartii* fungus lives over in both seed and soil. The fungus, for the most part, is introduced into the soil by planting infected seed. Once the fungus is introduced, it is able to live in the soil and cause *eumartii* wilt on potatoes grown in this soil at a future date.

Symptoms

Foliage

The first symptom, generally appearing the last of July to the middle of August, is light green areas between the veins of the top leaves. This gives the appearance of mild mosaic. Later the leaves develop reddish to purplish spots, particularly around the leaf veins to give the plant a bronze appearance. Sometimes at this stage the leaf margins turn up slightly, giving a cupped appearance. Figure 1 illustrates

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Figure 2.—Stem discoloration that accompanies *eumartii* infection in Russet Burbank potatoes.

these foliage symptoms. In most cases following the leaf bronzing, the plant wilts and collapses. Following plant collapse, it may be difficult to tell *eumartii* wilt foliage symptoms from ring rot and early dying.

Stems

External: The stems usually remain a dark dull green after the leaves wilt.

Internal: The discolored vascular tissue is often accompanied by amber to brown granular flecking in the pith, particularly at the nodes. Figure 2 illustrates the stem discoloration that helps to positively identify *eumartii* wilt.

Below Ground

The infected plant is easy to pull. The root hairs, fine roots and stolons are destroyed. Often the main stem below the ground level is shiny, slick, and waxy brown.

Figure 3.—Stem and tuber discoloration symptoms of *eumartii* wilt in Russet Burbank variety.



Tubers

External: There is a hole in the tuber where the stem is attached. The flesh on the stem end usually appears bluish under the skin because of the internal discoloration. There is often a sunken area at the stem end which may be accompanied by a wrinkled tissue around the margin.

Internal: The internal granular, brown to dark gray, dry rot starts at the stem end in the vascular tissue. This rot first fans out in the vascular tissue and it may, during storage, progress throughout the whole tuber. Figure 3 illustrates the stem and tuber symptoms that are a result of *eumartii* infection.

Control

If Your Farm Is Not Infected:

1. Do everything possible to prevent infected seed from being planted, thus preventing contamination of more soil or farms.
2. Plant only certified seed.
3. Do not bring or allow any machinery, sacks, bulk trucks, or any other potato equipment to come onto your farm unless it is steam sterilized first.
4. Do not bring dirt tare back to your farm.

If Your Farm Is Infected:

1. Use long rotations.
2. Grow sweet clover manure preceding potatoes.
3. Treat seed with Semasan Bel according to instructions on the label.
4. Sell all culls to a starch plant.

PESTICIDE RESIDUES: These recommendations for use are based on the best information currently available for each chemical listed. If followed carefully, residues should not exceed the tolerance established for any particular chemical. To avoid excessive residues, follow recommendations carefully with respect to dosage level, number of applications, and minimum interval between application and harvest.

THE GROWER IS RESPONSIBLE for residues on his crop as well as for problems caused by drift from his property to other properties or crops.