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PLANT DISEASES

POWDERY MILDEW ON POTATO

Powdery mildew on potatoes has not received a great amount of attention. However, there have been several reports of serious losses, with yield reductions of 20 to 50 per cent in severely infected fields.

Two powdery mildew fungi have been reported on potatoes, but only Erysiphe cichoracearum has been found in Washington. This fungus has been reported on potatoes throughout the world. It has a very wide host range, but the strain on potatoes is a distinct physiologic race. Even strains of the fungus on plants related to the potato cannot attack potatoes.

Powdery mildew on potatoes is not always as noticeable as is the disease on other plants. It first appears on potatoes as brown lesions of various sizes on stems and petioles (figure 1). These lesions coalesce to form short streaks or stippled patches. The white powdery coating typical of powdery mildews on most other hosts

Fig. 1--Stippling of stems and petioles by small brown lesions is characteristic of potato mildew.

Fig. 2--White mold on stem and leaves is an advanced symptom of powdery mildew.

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frequently does not develop on potatoes, but, if the air is moist, diseased leaves may eventually be covered by the mildew fungus (figure 2).

Leaves and stems are killed and only the tip of the plant may remain green. In severe cases the vines collapse. Infection and vine collapse may occur over large areas of the field. Late in the season small black specks may develop in the powdery growth. These are cleistothecia, the overwintering bodies of the fungus.

Some potato varieties are more susceptible to powdery mildew than others. In general, varieties such as Pontiac are more severely affected than the russet varieties.

There is some evidence that early planting will reduce losses from powdery mildew. Potatoes should not be grown following potatoes in fields where powdery mildew was severe.

Powdery mildew may be controlled by dusting with 30 pounds of sulfur per acre applied when the disease first appears. The disease will not be controlled if dusting is delayed until the mildew is well established on the plants. The dusting may need to be repeated if the disease is severe and reappears. Burning of plants may occur if sulfur is applied when temperatures are above 90° F.

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