

## POWDERY MILDEW OF POTATO

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Powdery mildew was first reported on field-grown potatoes in Washington in 1946 (2) and in Utah in 1960 (4). The disease is considered a yearly threat to about 20,000 acres of furrow irrigated potatoes in eastern Washington (1). We first saw the disease in the Ontario, Oregon area in July, 1986. In 1987, powdery mildew was observed in several fields throughout Malheur County, Oregon and Southwest Idaho. The disease has probably been established in this area for many years but not recognized because, without close inspection, it could easily be confused with the early-die complex.

Symptoms of powdery mildew, first appearing in early to mid-July, consist of scattered, small, elongated brown stipples or flecks on stems and leaf petioles. Affected areas in a field can often be seen from a distance as a slightly darker, dull green to gray cast to the foliage. As the disease progresses, the elongated, brown flecks become more abundant and coalesce into circular patches on the stems and leaves. If a hand lens is used, a white powdery mildew can often be seen on leaves and stems. In the later stages of the disease, the tops of the plant become infected causing the terminal leaflets to become twisted and brittle. Eventually the whole plant can be killed.

The severity of the disease depends on several factors. Furrow irrigated fields are the most susceptible, possibly because they are stressed more than sprinkler irrigated fields and also because frequent irrigations wash mildew spores off the plant and inhibit the spread of the disease. However, mildew was found in several sprinkler irrigated fields in 1987. Fields are more susceptible if they are weakened by water stress, low nitrogen or phosphorus, or early-dying. Norgold Russet is very susceptible and Russet Burbank is moderately susceptible.

Research in eastern Washington indicates that biweekly aerial application of 3-5 lbs flowable sulfur, beginning in early to mid-July, reduced the severity of powdery mildew in each of the four years in which trials were conducted (1). However, yield was improved in only 2 of 4 years. The disease will not be controlled if sulfur application is delayed until the mildew is well established on the plants (3).

Additional observations and research are needed in the Treasure Valley to ascertain how widespread powdery mildew is, its impact on yield, whether it is a primary disease agent or part of the early-die complex, and whether control measures are needed on sprinkler irrigated fields. The irrigation interval may be long enough on the finer-textured soils of this area that powdery mildew can become a problem in sprinkler irrigated fields as well.

### LITERATURE CITED

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