

Plant Pathology Factsheet

DOWNY MILDEW OF SOYBEAN

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SYMPTOMS

Pale yellow spots on the upper leaf surfaces of soybean leaves (Figure 1) indicate infection by the downy mildew fungus, *Peronospora manshurica*. The diagnostic feature of this disease is the presence of the downy mildew fungus (grayish downy tufts) on underleaf surfaces, directly opposite the upper leaf spots. These tufts are visual signs of the fungus producing infective spores. Although this disease is rarely of economic importance from a yield perspective, pods and seed may become infected and reduce seed quality to a certain extent.

DISEASE DEVELOPMENT

The downy mildew fungus survives in the field as thick-walled resting spores (oospores) in leaf debris and on seed. It is these oospores which serve as the primary source of inoculum. However, the wind dissemination of spores from the lower surface of leaf lesions is the primary means of spread of the disease. Typically, infection of leaves by these spores is dependent upon the presence of extended periods of dew and temperatures between 50-80 degrees F.

CONTROL

In most cases, control of this disease is not warranted. However, when seed quality is of importance, downy mildew control measures include use of certified seed, clean plow down of soybean residue, crop rotation with a non-host crop, and the use of resistant varieties, where available.



Figure 1. Typical leaf spots caused by downy mildew fungus on soybean.