Soybean damping-off this season

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Abstract
Excessive moisture this planting season has promoted damping-off problems. ISU Extension has received numerous reports on damping-off across Iowa, especially in southern Iowa. Both preemergence damping-off and postemergence damping-off have been found. This year seedling diseases are more complicated than in past years because of the alternating warm and cool weather. If the soil temperature is warm (70-80°F), damping-off by *Phytophthora* or *Rhizoctonia* is more likely to occur. If the soil temperature is cool (60°F or below), *Pythium* or *Fusarium* are more problematic.

Keywords
Plant Pathology

Disciplines
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The second and third weeks of May were warm, with air temperatures above 80°F. Samples of damping-off sent to the ISU Plant Disease Clinic following this warm weather were infected with *Phytophthora* and *Rhizoctonia*. Damping-off from fields planted in early May or late April was likely to be caused by these fungi. In the past 2 weeks or more, cool temperatures have returned (up to 14° below normal). The cool temperatures with excessive moisture are ideal for *Fusarium* and *Pythium* infection.

The disease incidence is further complicated by other factors such as insects, hail injury, and herbicides. Several damping-off samples received at the clinic have shown insect wounding (probably by bean leaf beetles) on the hypocotyls or hail injury on stems. Wounds by insects or hail create entry sites for fungi. Fungal infection may occur when soybean plants experience herbicide stress due to weather. In all these situations, fungal infections are secondary. Furthermore, *Pythium* infection is enhanced when soil crust delays soybean emergence.

If you decide to replant, check previous ICM newsletter articles on seed treatment decisions or order a copy of ISU Extension publication PM 1851, *Soybean Replant Decisions* [2], from the Extension Distribution Center on campus (call 515-294-5247). If seed treatment is to be used, keep in mind that fungicides effective against *Phytophthora* are also effective against *Pythium*. If a variety with *Phytophthora*-resistance genes (Rps1k) has damping-off, you may want to determine the causal agent because *Phytophthora* damping-off indicates the occurrence of new races in the field. Send diseased samples to the ISU Plant Disease Clinic, 323 Bessey Hall, Iowa State University, Ames, IA 50011, if you cannot determine the causal
agent. Call 515-294-0581 with questions on preparing samples.

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