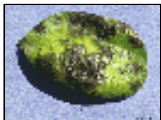


# INTEGRATED CROP MANAGEMENT

## Seedling damping-off by *Phomopsis/Diaporthe*

In the past 2 years, soybean top dieback, also called tip blight by growers, has emerged as a disease concern to some growers. The disease was initially reported in Ohio 20 years ago and was first noticed in Iowa in 1997. Foliar symptoms of this disease occur during the reproductive stage of soybean plants in August, but the fungi associated with the disease can cause damage during the seedling stage. In the 1998 growing season, we received reports and questions from producers on the occurrence of black lesions on cotyledons. In this article we provide information on seedling disease caused by the same fungi that caused these lesions.

Cotyledon infection is caused by a familiar group of pathogens, *Phomopsis/Diaporthe*, fungi related to those that cause Phomopsis stem blight and seed decay. These fungi produce abundant spores that are dispersed by wind and rain onto soybean plants. Symptoms of infected seedlings are often found before soybean plants reach the first trifoliolate stage (V1). Infected seedlings are noticeable by the presence of dark lesions on the cotyledons. In some fields, more than 90 percent of the seedlings can be found with infected cotyledons. If the infection occurs early under favorable weather conditions, especially with high precipitation, the potential damage is seedling damping-off.



[1] Lesions on a cotyledon.

In most plants that we observed, the infected cotyledons dropped without subsequent seedling damping-off. The fungi, however, may remain in the plants without causing symptoms until plants are stressed. If you find fields with a high level of infection on cotyledons, keep an eye on these fields for foliar symptoms in mid-August. Try to avoid practices that increase stress on soybeans. Because the disease affects seed quality by causing seed decay, identifying the problems in seed fields will be very helpful for soybean seed producers. Currently, little is known about this disease. With funds from the Iowa Soybean Promotion Board, plant pathologists at Iowa State University are conducting research to determine the infection process of this disease.



[2] Soybean seedling infected by *Phomopsis*.

There are two possible sources of inocula: infected seeds and infected soybean debris from previous soybean crops. Seedlings sprouting from seeds free of the fungi also can be infected after emergence by inoculum from infested debris. It has not been determined which source is important in causing the late-season damage. Preliminary experiments that we conducted on a few reported cases indicate that the inoculum was from infested residues.

Keep in mind that *Phomopsis/Diaporthe* are commonly present in fields where soybean has been grown. In most years, the disease is a minor problem and is not of concern to soybean production. Prevention of the introduction of the fungi into a field is not a recommendation, but avoid using infected seed to reduce the risk of damping-off. If you observe foliar symptoms late in the growing season, do not save the seed. In August, we will write a detailed article on identification of this disease.

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