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# Infected soybean seeds

## **Abstract**

This past growing season was unique because different regions in Iowa experienced different soybean diseases. Several of the diseases are seedborne and can cause discoloration of the seeds. Some growers may want to save their own seed this year to reduce production costs, as indicated by questions I have received on seed quality concerning seedborne diseases. The following seedborne diseases were reported as production problems in Iowa: white mold, Phomopsis diseases, Cercospora leaf spot, and bean pod mottle virus. This article discusses how to handle infected soybean seeds.

## **Keywords**

Plant Pathology

## **Disciplines**

Agricultural Science | Agriculture | Plant Pathology

# INTEGRATED CROP MANAGEMENT

## Infected soybean seeds

This past growing season was unique because different regions in Iowa experienced different soybean diseases. Several of the diseases are seedborne and can cause discoloration of the seeds. Some growers may want to save their own seed this year to reduce production costs, as indicated by questions I have received on seed quality concerning seedborne diseases. The following seedborne diseases were reported as production problems in Iowa: white mold, *Phomopsis* diseases, *Cercospora* leaf spot, and bean pod mottle virus. This article discusses how to handle infected soybean seeds.

**White mold** caused problems in northeastern Iowa. It is wise not to save seeds from fields severely infected with white mold. The combines cannot separate white mold sclerotia (a mouse-dropping-sized fungal structure) from soybean. Use of contaminated seeds spreads the pathogen from field to field. If you have to save seeds from a white mold-infected field, you should thoroughly clean the seed with a professional seed cleaner to remove the sclerotia and infected seeds.

***Phomopsis*** species were reported in Iowa but were less extensive than last year. Typical symptoms were a light yellowing of the top leaves followed by death of tissues from the top down. Diseases caused by *Phomopsis* are seedborne. Infected seeds may be cracked and shriveled and usually have a low germination rate. If these seeds are used, they may result in low emergence or seedling blight. It is recommended to do seed testing if seeds are to be saved from fields where diseases by *Phomopsis* were severe this year.

Two diseases caused by *Cercospora* are called ***Cercospora* leaf spot**. **Purple seed stain** is caused by *C. kikuchii*. This disease is a minor production problem in Iowa. This fungus causes *Cercospora* leaf blight during a growing season. Infected seeds have a pink-to-purple discoloration on their seed coats. **Frogeye leaf spot** has been found causing damage in a few fields. This disease is caused by *C. sojina* and also is seedborne. Infected seeds have areas of dark gray to brown. Seed coats sometimes have cracks and flakes. *Cercospora* fungi survive in crop residues after introduction from seeds. The disease may build up when conditions are favorable for disease development next season.

Damage by bean leaf beetle and **bean pod mottle virus** (BPMV) have been the major factors causing seed discoloration in Iowa soybean. The seed coat will have discoloration starting from the hilum. Discoloration may be eggshell or dark gray, depending on the hilum. BPMV can cause seed quality problems although this disease usually is not a production problem in Iowa. Available information indicates that overwintering virus-carrying beetles are the major source of virus in the spring. Virus from infected seeds appears a minor concern. Because beetle damage also causes similar seed discoloration, seed testing is necessary to determine the presence of the virus.

Growers who want to save soybean seeds for next season are advised to check seed quality. Images of above-mentioned diseases can be found in related [Integrated Crop Management Newsletter](#) [1] articles.

Keep in mind that although these diseases can cause seed discoloration, other nonpathogenic factors also can cause such discoloration. For a reliable identification, seed testing is needed. By identifying the pathogens causing the problems, proper seed treatments may be used to reduce disease risk. The ISU Seed Science Center provides seed testing for a charge. For more information on seed testing, call 515-294-6821.

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