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## Premature defoliation in soybean

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# Premature defoliation in soybean

## **Abstract**

After Labor Day, some soybeans started to turn yellow, especially those in maturity groups II or earlier. However, you also may have observed premature defoliation in soybean fields planted with later maturity groups, such as group III or later. Typically, only some areas within fields have defoliated plants; in the rest of the field, the plants are still green. Such defoliation can be caused by abiotic and biotic factors such as diseases. If defoliation is caused by disease, infected areas offer a good opportunity to spot the disease, which can be helpful in future prevention.

## **Keywords**

Plant Pathology

## **Disciplines**

Agricultural Science | Agriculture | Plant Pathology

# INTEGRATED CROP MANAGEMENT

## Premature defoliation in soybean

After Labor Day, some soybeans started to turn yellow, especially those in maturity groups II or earlier. However, you also may have observed premature defoliation in soybean fields planted with later maturity groups, such as group III or later. Typically, only some areas within fields have defoliated plants; in the rest of the field, the plants are still green. Such defoliation can be caused by abiotic and biotic factors such as diseases. If defoliation is caused by disease, infected areas offer a good opportunity to spot the disease, which can be helpful in future prevention.

Several fall foliar diseases can cause premature defoliation. Fall foliar diseases commonly seen this season are **Cercospora leaf spot** and stem and foliar diseases caused by Phomopsis/Diaportha fungi. Symptoms of Cercospora leaf spot are mottled purple-to-orange discoloration of the uppermost leaves. The infected leaves become purple and have a leathery appearance in August and become orange or bronze when the plant is approaching maturity. Severe infection may cause early defoliation. If you find such bad spots, consider tillage to bury infected residues that may harbor this pathogen.



**Cercospora leaf spot on soybean.**

[Enlarge](#) [1]

**Sudden death syndrome** is widespread this growing season, with the highest level of incidence since it was first detected in Iowa. In many soybean fields, however, this disease caused less defoliation damage than possible because soil moisture was not ideal for disease propagation. Infected plants showed premature defoliation after the end of August. Bluish fungal colonies may be seen on the roots of infected plants when they are pulled from moist soil. When soil moisture is low or plants are pulled out for a period of time, these colonies turn white. Consider using a tolerant variety for the next soybean planting if premature defoliation occurs in large field areas.



**Bluish sudden death syndrome fungus on infected soybean root.**

[Enlarge](#) [2]

**Bean pod mottle virus**, also prevalent this season, has different effects on plant maturity compared with fungal diseases. Delayed maturity is common in virus-infected plants, and they may have green stems when pods are mature.

Physical stress such as dry stress in the late season also can result in premature defoliation in portions of a field. Areas of defoliation are on high ground or on the hillside of a field. Dry stress-related premature defoliation is common in fields with sandy soil. Plants often have perfect root systems and no disease lesions on stems.

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