

Soybean Disease Control

Diseases may cause significant soybean yield losses in some fields in South Carolina. Detection of such pests is often difficult, and symptoms may be confused with other pests.

CONTROL OF SEEDLING DISEASES

“Damping off” and other seed- and soil-borne diseases may attack young soybean seedlings shortly after germination or emergence. Cool or wet soil increases the probability of stand reduction from these diseases, but poor quality seed is a major cause of the problem.

The following controls are suggested:

- Use high-quality seed (certified seed preferred). Adjust seeding rate to percent germination to avoid excessive plant populations.
- Use a seed-treatment fungicide on seed with less than 80 percent germination and on all soybean seed to be planted in cool, wet soil. Also use a fungicide when soybeans are planted with conservation tillage since vigorous stands are critical to early weed control. Note: Seed treatments do not compensate for poor seed quality.
- Fungicides recommended for seed treatments are: Captan-carboxin (Enhance Vitavax Captan), or thiram (Gustafson 42S), or thiram + Mo + N fixing bacteria (Triple-Noctin L), or PCNB-metalaxyl 25-6.75 (Apron-Terraclor) or Carboxin + thiram + Molybdenum (Vitavax - M).

Closely follow the manufacturer’s label for dosages and application procedures in treating seed. Do not use treated seed for food, feed, or oil.

LEAF, POD, AND SEED DISEASES

Soybean yield and quality in some fields may be reduced by fungus diseases such as anthracnose, Diaporthe pod and stem blight, stem canker, Septoria, Cercospora leaf and pod blights, and purple seed stain. Soybean monoculture may add to the problem.

Control options suggested are:

- **Rotate soybeans** with nonleguminous crops such as corn, cotton, or grain sorghum. Double-cropping with wheat is not an acceptable rotation scheme to control fungus diseases.
- **Plow down crop stubble** soon after harvest. If food is needed for wildlife or if soil cover is critical for erosion control, disc the crop residue lightly, making sure that most of it contacts the soil and that some roots are exposed.
- **Plant high-quality soybean seed.**

Foliar fungicides available for grower use include benomyl (Benlate 50WP), chlorothalonil (Bravo 720), and thiophanate-methyl (Topsin M). Use the following guidelines when considering a fungicide:

- Use only on soybeans to be harvested for seed.
- Use on fields with a history of pod and foliage diseases.
- For a better chance of yield response, use an early-maturing variety.
- Know yield potential (it should be 30 bushels per acre or more) before considering a foliar fungicide.

CONTROL OF STEM CANKER DISEASE

Diaporthes stem canker can significantly affect susceptible varieties.

Stem canker attacks soybeans late and usually kills plants starting from the mid- to lower-stem nodes and moves upward as the plant matures. Small, elliptical, dark brown cankers usually appear on the main stem near the base of nodes. Cankers enlarge as the disease spreads. Leaves of infected plants sometimes exhibit a flagging symptom with interveinal chlorosis and then die. Other diseases such as CBR cause similar symptoms. The leaves hanging on the plant after dying give the appearance of frost injury.

To control stem canker, deeply turn under infected soybean residue as soon as possible; rotate to non-host crops for 1 or 2 years; and plant tolerant varieties where possible. Recommended varieties for South Carolina with recognized levels of stem canker tolerance include: Asgrow A7986, Deltapine 3589, Deltapine 726, Pioneer 9584, NK's Coker 6847, NK's Coker S83-30, NK's Coker 6738, Hutcheson, Hartz H8558, Hartz H5545, Hartz H7190, Musen, Braxton, Thomas, Stonewall, Perrin, Hartz 6686, Pioneer 9641, Pioneer 9692, Deltapine 3733, NK's S75-55, Pioneer 9761, and Cook. Foliar fungicides are not recommended at this time for stem canker control in South Carolina.

CYLINDROCLADIUM ROOT AND STEM DISEASE (CBR)

This fungus can persist in the soil for several years. Infection occurs in the taproot and spreads up the stem 8 to 12 inches, killing all roots and infected

stem tissue. Masses of small, circular, reddish-orange fruiting structures of the CBR fungus usually develop on stems at the soil surface. CBR attacks many kinds of legumes as well as other plants; it can be spread by soil moved on plows and cultivation equipment and by surface water. No chemical controls are available. Some varieties appear more susceptible than others, but tests have not been conducted evaluating varieties or lines for CBR tolerance. The disease is usually considered to have little economic impact in South Carolina. Rotation to nonlegume crops is the only economical control.

SOUTHERN STEM BLIGHT DISEASE

This fungus survives well in the soil on organic matter, is favored by hot weather, and is recognized by a lot of white mold on stems at the soil surface that causes rotting of stems and roots. Small tan to brown, "mustard seed-like" fruiting bodies are produced within the white mold growth. The disease is most often seen in June, July, and August. The disease seldom appears to cause serious economic soybean losses in South Carolina. No chemical controls are available.

Additional information on soybean diseases may be found in Extension Circular 504, **Soybean Insects, Nematodes and Diseases** available at your county Extension office.

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Printed on recycled paper with soy ink

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