SOYBEAN SEED TREATMENTS FACT SHEET

This is one in a series of fact sheets from the Mississippi Soybean Promotion Board and the soybean checkoff. Each sheet presents a brief overview of a topic important to Mississippi soybean production. More information on each topic can be accessed through the link at the bottom of the sheet. To see other fact sheets, click here.

Soil- and seed-borne pathogens and soil insects can reduce soybean stands below those expected from using a chosen seeding rate. A verified solution for this problem is to apply a broad-spectrum fungicide and insecticide seed treatment that has known efficacy against expected pathogens and insects.

The preponderance of evidence indicates that an appropriate fungicide treatment applied to soybean seed prior to planting can result in about a 10% increase in plant population from a given seeding rate. **Using such seed treatments will not likely result in a yield increase, but rather is insurance that an acceptable plant stand will be achieved from the used seeding rate.** This is a valuable result from their use since replanting a failed stand will result in later planting with lower yield, and extra cost.

Environments in which fungicide seed treatments provide benefit are early planting in cool wet soils with anticipated slow seedling emergence and growth, minimum-till or no-till systems, fields with high amounts of surface residue, fields that are planted continuously to soybeans, and fields with a previous history of seedling diseases.

There are two classes or types of seed treatment fungicides. Contact or protectant fungicides are active against pathogens present on planted seeds, whereas systemic fungicides are active against soil- and residue-borne fungi that attack planted seeds if soil conditions promote disease development.

Pythium, Phytophthora, Fusarium, Phomopsis, and *Rhizoctonia* are the most common pathogens that reduce soybean germination and emergence in Midsouth soybean plantings. Fungicide combinations (e.g. Apron Maxx, Evergol Energy, Acceleron Basic, Seed Shield Select) that have excellent activity against these pathogens should be used on all planted soybean seeds regardless of planting date to ensure achievement of an acceptable stand in all planting environments. ILeVO and Saltro are seed treatment fungicides that are specifically for use in fields with a known history of sudden death syndrome.

Insecticide seed treatments that contain systemic ingredients with efficacy against bean leaf beetle, thrips, and three-cornered alfalfa hopper, among others, have been shown to provide a small but economic yield increase from Midsouth soybean plantings. These insecticides generally have an efficacy period of 30-45 days, and are not a replacement for late-season insect control that is usually necessary in late plantings of Midsouth soybeans. Insecticide seed treatments are usually applied to soybean seed in a combination product (e.g. CruiserMaxx, Acceleron Standard, Equity VIP, LumiGEN system, Seed Shield Select) that includes broad-spectrum fungicide seed treatment products. They will be most effective in fields with a known history or expected occurrence of crop damage from early-season insects that will reduce or damage stands.

Nematicide seed treatments are available for use in nematode-infested fields, and they are usually components of seed treatment products that contain a fungicide, an insecticide, and a nematicide (e.g., Avicta Complete Beans 500, Clariva Elite Beans). Some of the nematicide components have activity against soybean cyst nematode only. All of the nematode-protectant seed treatment products are intended to supplement but not replace current nematode management practices of growing varieties with resistance genes and rotation to nonhost crops.

Click here for a detailed discussion of this topic, and here for labels of seed treatment products.

Composed by Larry G. Heatherly, Updated Nov. 2023,
larryh91746@gmail.com