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Soybean Seed Treatment

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Abstract

Seed treatment was not a major production issue ten years ago because less than 3 percent of soybean planted in Iowa used seed treatment. Now the number is more than 50 percent, according to a survey. Such changes are associated with changes in soybean production. Increased cost of seeds and early planting in spring may be driving forces for such changes.

Keywords

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Soybean Seed Treatment

X.B. Yang, Department of Plant Pathology

Seed treatment was not a major production issue ten years ago because less than 3 percent of soybean planted in Iowa used seed treatment. Now the number is more than 50 percent, according to a survey. Such changes are associated with changes in soybean production. Increased cost of seeds and early planting in spring may be driving forces for such changes.

It is no question that seed treatments can increase yield in fields where risk of seedling diseases are high, for example, growers in Ohio routinely use seed treatment to prevent Phytophthora damping off. Despite the greater demand for seed treatment today, it is unknown if the majority (50% or more) of Iowa soybean fields will see an economic return from treatments. This is because of lower seedling disease risk in Iowa compared to Ohio and because soybean plants have a greater ability to grow over a large gap. Assessing the risk of seedling diseases in particular fields before use of a seed treatment can provide the producer needed protection while reducing production cost.

Why seed treatment

In Iowa, as well as elsewhere in the North Central Region, seed treatments are mainly to protect seedling from damping off by Phytophthora and Pythium. In some years Rhizoctonia and Fusarium can be production problems to a few growers, both neither create major problems.

When to treat seeds or effectiveness of seed treatments

Because in most seasons seedling diseases are not a general problem and are unique problems to individual Iowa farmers, producers should selectively use seed treatments in order to reduce production cost. Below are specific cases where one should use treated seeds.

1. When seed quality is poor, such as last year. Seed treatment will not improve germination rate, but will protect further stand loss. Generally speaking, this year the seed quality has been good. Seed quality has not been an issue.
2. Your fields have a history of severe damping off from Phytophthora or Pythium and the coming spring is wet. Phytophthora can cause damping off for some Iowa soybean producers, especially in southern Iowa. However, if spring is not wet, the disease will not be a problem. This also applies to Pythium when soybeans are planted early. Pythium is a cool temperature disease and is not a concern when soybean is planted later in May or after.
3. Replanting. If replanting is needed, seed treatment is insurance for a good stand. The lack of stand establishment during germination is a sign of seedling disease in your field. Using seed treatment is a must. However, insects such as seed corn maggots sometimes cause seed rot. Make sure the lack of soybean stand is from disease, not insect when you replant.
4. Early planting. Early planting, planting before May, is not a reason

in itself for seed treatment. When soybean is planted earlier, the soil is cool and seedling diseases Pythium and Fusarium occur in cool soils. Past surveys of these diseases indicate Fusarium only accounts for about 10 percent of seedling disease problems in Iowa.

Finally, many seed treatment has multiple packaging which includes insecticide such as Cruiser. Seed treatment with insecticide will not help aphid control, but it may reduce first generation of bean leaf beetles if the insect is a concern in your production.

XB Yang is a professor of plant pathology with responsibility in research and extension. Yang can be contacted by email at xbyang@iastate.edu or by phone at (515) 294-8826.

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