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Soybean seed quality in 2006

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Abstract

The 2005 growing season will be remembered by many because of the high yields. However, there are also a few farmers who will remember it as one of the driest on record. Eastern Iowa, central Illinois, and Indiana were under drought conditions during the majority of the growing season.

Disciplines

Agronomy and Crop Sciences



Crop Production

Soybean seed quality in 2006

by Palle Pedersen, Department of Agronomy

The 2005 growing season will be remembered by many because of the high yields. However, there are also a few farmers who will remember it as one of the driest on record. Eastern Iowa, central Illinois, and Indiana were under drought conditions during the majority of the growing season.

As a result of drought stress conditions, some lots of soybean seed from these areas may have low quality with germination percentages below 90 percent. In addition, seed size also will be more variable from these areas. While seed size varies among varieties, it also depends on the environment where the seed is grown; therefore, we will see some variability in seed size this year even within the same variety. It is important to remember that seed size normally does not affect emergence or yield potential. Smaller and larger seeds of a same variety will have the same yield potential.

When planting a smaller seed, it is important to consider a few aspects concerning seed germination and growth. For example, a small soybean seed planted in the ground cannot derive the energy it needs for growth from photosynthesis. The seed is, therefore, totally dependent on its reserve of the energy produced by the parent plant. The more energy the seed contains, the longer the seedling can continue to grow without becoming photosynthetically self-sufficient. In practice, this means that a large seed with a considerable amount of stored energy can usually be planted at a greater depth than a small seed with a limited energy reserve. Therefore, seeding depth is even more crucial this year

because of the small seed size. Optimum seeding depth for soybean is 1 to 1.5 inches. With today's planters and technology, a wide range of seed sizes can be planted. Before planting, set, adjust, and test the planter metering units to achieve the desired drop. It is highly recommended to make periodic stops during planting to adjust planting depth and seeding rate based on field conditions and planter operation.

It is recommended that you read the tags carefully this year. Even though the majority of growers in Iowa won't be affected, it is still always a good idea to read tags prior to planting. As a general rule, if you see germinations below 90 percent, it is recommended that you adjust your seeding rate. This is especially the case if you are planting using the new seeding rate recommendation for Iowa, which is 125,000 to 140,000 seeds per acre for 15-, 20-, 22-, 30-, and 36-inch row spacing. For drills, it depends on each individual farmer, type of drills, and speed. It doesn't matter if you are using a drill or a planter, but it just takes 100,000 evenly distributed plants per acre at harvest to maximize yield, so it is up to you to get to this number. For more information on soybean seeding rate, go to www.soybeanmanagement.info.

Palle Pedersen is an assistant professor of agronomy research and extension responsibilities in soybean production.