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Is Dry Soybean Seed an Issue for 2012?

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Abstract
Areas of Iowa and other Corn Belt states were very dry during soybean harvest in 2011. Subsequently much of the soybean harvest occurred at lower than normal grain moisture levels, including soybeans grown for seed. We have heard reports from farmers, Extension and industry personnel that some fields were harvested with seed moisture as low as 7 percent. Handling seed with low moisture must be done very carefully to prevent damage to seed coats. This includes seed movement during harvest, seed cleaning, seed treatment and delivery to planters.

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Is Dry Soybean Seed an Issue for 2012?

By Mark Licht and Terry Basol, Field Agronomists and Andy Lenssen, Department of Agronomy

Areas of Iowa and other Corn Belt states were very dry during soybean harvest in 2011. Subsequently much of the soybean harvest occurred at lower than normal grain moisture levels, including soybeans grown for seed. We have heard reports from farmers, Extension and industry personnel that some fields were harvested with seed moisture as low as 7 percent. Handling seed with low moisture must be done very carefully to prevent damage to seed coats. This includes seed movement during harvest, seed cleaning, seed treatment and delivery to planters.

Careful handling
At this time it is not possible to prevent damage done during harvest, and typically farmers, elevator operators and seed dealers handle seed as carefully as possible to prevent postharvest damage. Careful movement of seed includes avoiding use of steel screw augers, slower than normal flow rates whether with air, conveyer belt or brush augers, and keeping seed drops as short as possible to prevent damaging soybean seed coats. When handling individual bags of soybeans, simply dropping them onto one another off the back of a truck may damage soybean seed coats. This is even more of a concern this spring given the very dry soybean seed from the fall of the 2011 harvest. Seed with damaged coats rarely contribute to stands.

Farmers should carefully read tags or papers obtained with each seed lot purchased. Information on Certified Seed tags or Quality Assurance papers will include germination percentage. It is important that farmers use the Pure Live Seed percentage when determining the desired seeding rate. But remember, the germination on tags or papers was the germination when the seed left the point of purchase. Soybean seed often is moved at least two times prior to planting, and each movement can result in decreased germination. However, germination percentage does not always tell the entire story on vigor of seed, particularly for soybean seed.

Seed Germination Tests
The Iowa State University Seed Testing Laboratory offers several tests that can provide additional, useful information for farmers. These include Sand Germination (7-10 days duration), Cold Germination (Iowa Test, 12-14 days duration), and Accelerated Aging (about 10 days duration). Results from these tests can help determine seeding rates required for each specific seed lot, a particularly important consideration for early planting soybean. Additional information on seed testing by the ISU Seed Testing Laboratory is available at: http://www.seeds.iastate.edu/seedtest/

A quick home test, called Chlorox Soak Test, can provide useful germination determination. Information on the “Chlorox Soak Test” was provided to us by Dr. Brent Turnipseed, Professor and Manager of the South Dakota State University Seed Testing Lab. Briefly, the test requires:

http://www.extension.iastate.edu/CropNews/2012/0329lichtbasollenssen.htm
Mix three fluid ounces of chlorox in one gallon of water.
Count out one or more 100-seed lots, depending on accuracy desired.
Remove all “splits” or obviously broken seed, and place each 100 seeds in a separate tray.
Pour a sufficient amount of chlorox-water solution over the seed so all are covered.
After 10-15 minutes, pour off the chlorox-water from each tray and spread out the seed on a paper towel so they may be counted.
Count the number of swollen seeds in each 100-seed lot. Swollen seed are damaged seed, and likely will not contribute to stands.

Swollen seed typically should not exceed 10 percent, or 10 of the 100 seed in each lot. This test can be used when harvesting seed to confirm combine operation is not damaging seed, or any other time seed are handled at seed plants or farmsteads prior to planting.

This year it will be extremely important to consider pure live seed and seed germination when determining seeding rates. Keep in mind research studies have documented that about 100,000 soybean plants per acre at harvest will provide optimal yield in most Iowa environments. Planting sufficient seed to obtain a suitable stand is important, but planting excessive amounts of seed reduces profitability of soybean production. Knowing the germination percentage of each seed lot is important in developing the most profitable planting rates by Iowa farmers.

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