Soybean and Small Grains

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Read the Tag and Check the Germ in 2008

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Seed quality is rarely a widespread issue in soybean; however, in 2008 it will pay for growers to check the % germination of each seed lot that they purchased and adjust their seeding rate accordingly. In a normal year most soybean seed is sold at 92% germ or greater. In 2008, growers may find several varieties sold at 85% germ and some may be marketed as low as 80% germ. The lowered germ in seed available now was caused by adverse environmental conditions during the soybean seed-fill period. Our hypothesis is that dry conditions in the R4 (full pod) and R5 (beginning seed) growth stages limited seed size, then substantial rainfall in the mid to late R6 (full seed) growth stage caused an unexpected late season expansion in seed size. This surge caused the soybean seed coat to be thinner than normal thus adversely impacting seed quality. As the seed is mechanically handled during the harvest, transportation, cleaning, and bagging process, damage can be inflicted on seed with such a thin seed coat. It is also being suggested that some seed lots with low germ (80%) caused by thin seed coats should not be treated with a fungicide and/or insecticide in 2008. The rationale behind this is that the mechanical process of treating may further decrease the already low germination. We are not suggesting that seed treatments be avoided in 2008, we are just cautioning growers to consider the cost benefit for those few varieties that have low germs caused by thin seed coats.

Percent germ information is either printed directly on the seed bag (usually the bottom) or printed on a seed label (Image 1).

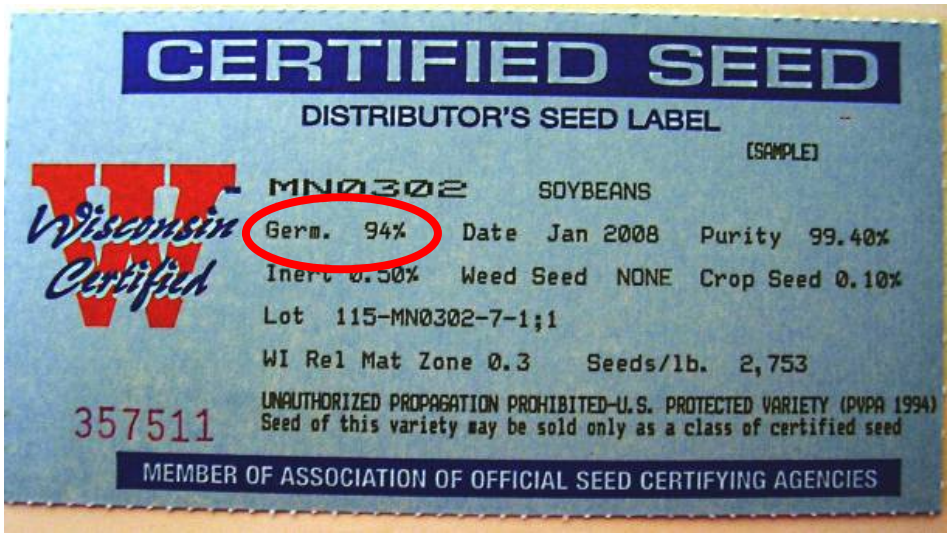

Image 1. Example of a soybean seed tag

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In a normal year, we assume 90% of the live soybean seed we plant will emerge. To estimate our stand population we conduct the following calculation:

Seeding rate x % germ x % expected emergence = estimated stand

In this example, our grower drills 180,000 seeds per acre of 94% germ seed, and assumes 90% emergence. The estimated soybean stand will be = 152,280 plants/acre. If the grower planted 80% germ seed the estimated soybean stand would be = 129,600 plants/acre. Under most environmental conditions 129,000 plants/acre would produce 100% yield potential, however if we do not achieve our assumed 90% emergence rate do to poor early season growing conditions we rapidly approach stands where yield loss may occur.

If you receive your soybean seed early and want to check your germ, germination tests can either be completed at home or by sending a sample to the Wisconsin Crop Improvement Association. A home test can be performed by counting out 100 seeds and placing them in a damp paper towel. Place the paper towel into a plastic bag to conserve moisture and store in a warm location out of direct sunlight. After five days count the number of germinated seeds that have both an **intact** root and shoot. This will give the grower an estimate of % germination. It is important to choose random seeds throughout the entire seed lot and conduct at least 4 - 100 seed counts. The Wisconsin Crop Improvement Association also performs an official AOSA germination test. The test requires 1.25 pounds of seed and costs $10.00.