LeVan, N.A., A. S. Goggi, and R. Mullen. 2008. Improving the reproducibility of soybean standard germination test. **Crop Science 48: 1933-1940.**

Abstract

Dry, windy weather conditions during harvest can lead to very low seed-moisture content and severe soybean [*Glycine max* (L.) Merr.] seed germination problems. Some low-moisture content seed lots have particularly low and highly variable standard germination test results, presumably caused by imbibitional injury. The objectives of this study were to evaluate the influence of seed moisture content and seed composition on germination in the laboratory and field, and to evaluate standard germination test protocols for testing low-moisture content soybean seeds. Commercial seed lots of different seed composition were equilibrated to 0.07, 0.08, and 0.12 g H2O/g fw. Four official testing media were used in the experiments: rolled paper towels (T), crepe cellulose paper (C), crepe cellulose paper covered with sand (CS), and sand germination (S). Soybean germination and emergence were affected by maturity group, seed composition, and field conditions at planting. The testing medium and seed moisture content also influenced germination in the laboratory, but seed moisture content did not affect field emergence. These results suggest that soybean imbibitional injury caused by low-moisture seed lots occurs primarily in the laboratory. Seed analysts must consider soybean seed composition, moisture content, and their interaction with testing media when testing low-moisture content soybeans in the laboratory.

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