

**Date:** June 30, 2021

**Title:** Effect of media substrata on *Triticum spp.* seed germination.

**Purpose of Study:** According to the Association Official Seed Analysts (AOSA) Rules for Testing, appropriate media substrata are between blotters (B), paper toweling (T), or sand (S) for *Triticum spp.* at 20 or 15°C. Germination on top of creped cellulose paper without a blotter and covered with ½ to ¾ inch layer of sand (TCS) may be a comparable to the current approved methods.

**Justification:** Consistent germination moisture levels can be maintained by adding water to creped cellulose paper, followed by planting seed and covering with dry mason sand. Sand tests reduce light penetration resulting in less fungal mycelium growth and questionable seedlings.

**Research Design:** A randomized block design of four replicates of one hundred seeds from four seed lots will be analyzed for warm germination with three media substrata (S, T, or TCS). Samples shall be grown at 20°C with a first and final count at 4 and 7 days, respectively. This testing will be completed at four seed testing laboratories for cross lab validation.

**Research Method:** Participating laboratories will receive four seed lots for germination analysis with the use of three media substrata (S, T, or TCS). These lots will be tested at time of receipt at 20°C with a first and final count at 4 and 7 days, respectively. Response variables will include normal and abnormal seedlings and dead and dormant seeds. Ungerminated seeds will be subjected to tetrazolium (TZ) testing to determine if dead or dormant. Data will be returned to the investigator for statistical analysis for LSD and significant differences ( $P < 0.05$ ) of treatment means and interlaboratory repeatability and interlaboratory reproducibility.

**Publication of Results:** Study description and results will be presented as a paper at the annual AOSA/SCST meeting. If warranted, an AOSA Rule Proposal will be published in the newsletter

**Budget:**

Purchase of four seed lots.....	\$500.00
Shipping and Handling.....	\$100.00
Testing.....	\$400.00
<b>Total.....</b>	<b>\$1,000.00</b>

**Estimated Completion Date** (Note: A report is due 12 months after funding): May 2022.

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