

Many factors, including age of seed, mechanical damage, storage conditions, sprouting, weathering and varietal differences all affect seedling vigor. While some of these factors are out of the producer's control, storage conditions and mechanical damage can and should be managed to maintain the vigor of the seed.

Accelerated aging (AA) tests were originally developed for soybeans but have been adapted for other crops such as field beans and field peas. AA tests determine the relative vigor level of soybean seed.

How the AA Test is Conducted

Seed is maintained at very high relative humidity and high temperature for a defined period of time, (usually 48 or 72 hours) to simulate the aging process. Then the "aged" seed is planted as in a normal germination test. The percentage of normal seedlings is determined after 7 days. A standard germination test is conducted concurrently on seed from the same sample for comparison purposes.

Interpreting Results

The accelerated aging score should be compared to the standard germination percentage. The closer the AA score is to the germination percentage, the higher the vigor of the sample. Seed vigor is determined accordingly:

High vigor..... AA score within 15 pts of germination percentage
Medium vigor....AA score within 16 – 30 pts of germination percentage
Low vigor.....AA score greater than 30 pts of germination percentage

The AA test does not predict the expected emergence in the field under stressful conditions. Seedling emergence will be closer to the standard germination score under favorable planting conditions. Seed with a higher score should perform better under stress than seed with a lower score.

If the quality of your seed is in question, or if the seed might be planted in stressful field conditions, the department recommends the AA test to determine the vigor.