

Otoni, R. R., and **M. B. McDonald**. 2005. Moisture and temperature effects on maize and soybean seedlings using the seed vigor imaging system. *J. Seed Technol.* 27:243-247.

### **Abstract**

Reliable and fast results from seed quality tests are essential for producers. The Seed Vigor Imaging System (SVIS) was developed to improve seed quality assessment. This study had the objective of identifying the optimum moisture content for paper towels used in germination testing as well as the desired temperatures for germination during the three-days of test. Seeds were planted in paper towels with seven different moisture contents for maize and eight for soybean. Three different temperatures (24, 25, AND 26C) were used for germination of the two crops. Decreased speed of growth and overall vigor indices were observed when the moisture content of the paper towel was less than 96% saturation in maize and 79% saturation in soybean. When the germinator temperature varied 1 C less than 25 C, no difference in SVIS indices was detected. However, a difference of 1 C more than 25 C caused a significant difference in seedling growth. These results demonstrate the importance of monitoring moisture content in paper towels, particularly for maize seeds, used in the conduct of the SVIS test and show that moisture and temperature variables must be carefully monitored during the conduct of standard germination and vigor tests to assure standardization of reported results.