

DeVries, M. and A. S. Goggi. 2006. Determining the extent of frost damage in maize seed using the tetrazolium test. **Crop Management doi:10.1094/CM-2006-0414-01-RS.**

### **Abstract**

Frost damage in seed corn causes a significant decrease in seed quality. The tetrazolium (TZ) test has been used to identify types of physiological damage in several plant species, including frost damage in corn. Quantifying the amount of seed damaged by frost and the consequent loss of seed vigor are important for making management decisions. The current tetrazolium test procedures provide seed viability information but do not estimate seed vigor. In our project, the tetrazolium staining procedure was modified to allow separation of viable seeds into vigor categories. Vigor categories were defined based on Association of Official Seed Analysts (AOSA) recommendations, previous research, and current observations. The results from the tetrazolium test were compared with standard germination and saturated cold tests during the first 6 months of storage. The staining procedure aided in visual identification of frost damage. Although a strong correlation was found between seed viability as determined by the tetrazolium test, the standard germination test, and the saturated cold test, sorting seeds into vigor categories in the tetrazolium test did not improve the correlation between the tetrazolium test and the saturated cold test.

### **URL:**

<http://www.plantmanagementnetwork.org/pub/cm/research/2006/frost/>