

ROEMER, RONALD L. and JOHN J. GALLIAN, University of Idaho, Twin Falls R&E Center, P.O. Box 1827, Twin Falls, ID 83303-0127. **Field Emergence Testing of Commercial Sugarbeet Varieties.**

ABSTRACT

A continuing program was initiated in 1995 to determine the field emergence of commercial sugarbeet varieties. In Idaho, growers have usually selected their varieties long before seed is available. Usually commercial seedlots are not brought into the state until late winter or early spring, and in many cases growers are only able to take delivery of seed a matter of days prior to planting. Any rapid test of emergence and/or seedling vigor would likely not allow growers enough time to alter their variety choice and select an alternative variety that's acceptable. With most fields now being planted to stand, there was a strong need for reliable emergence and seedling vigor information to be used by growers in their variety selection process. The objectives are to determine (1) the percent of seeds that become established plants, (2) the variability in vigor among locations and years and (3) if a significant difference exists in seedling vigor. In this study seedling vigor is defined as the rate of emergence.

Seed was randomly sampled for each variety from commercial seed lots available to growers that were used in our standard variety trials. Fifty seeds were planted in single-row plots twenty-five feet long with four replications at 3-5 locations each year. Seeds were planted one inch deep using a cone planter with Milton disk openers. Most of the tests were planted on growers fields and were managed using their standard cultural practices. Most tests were immediately irrigated to promote optimum emergence. Plant counts were started as soon as the first seedlings were observed to be emerging, a second count taken when approximately 50% of the beets were emerged and final counts were taken when emergence was complete.

The results of these tests have shown significant differences in emergence among varieties in each of the four years of testing. The emergence mean of varieties common to all four years of testing was, 84%(1995), 77%(1996), 68%(1997) and 80%(1998). Emergence differences within the same variety have followed similar trends from year to year. The majority of varieties performed best in the 1995 season and performed worst in the 1997 growing season due to enviromental conditions those years. The relative performance of varieties has been very consistent from year to year, with the same varieties holding their rankings from one year to the next. There have been significant differences among varieties in emergence but this often does not always translate into a better final emergence count.

These data provide growers with realistic emergence information and has become as important in their variety selection as yield and sugar percentage. Because of growers favorable response to the field emergence testing, it has become a standard part of our standard variety testing program.