

McGRATH, J. MITCHELL. USDA-ARS, 494D PSSB, Crop and Soil Sci, Michigan State University, East Lansing, MI 48824-1325. **Sugarbeet seed germination and emergence in the laboratory and field: new approach to an old problem.**

Establishment of sugarbeet field stands is a recurring problem for growers. Predicting field emergence using laboratory testing would be advantageous, particularly if the factors governing sugar beet seed germination related to the process of stand establishment were targeted. We developed a strategy to examine germination under a set of easily reproduced conditions where moisture was not limiting. Thirty-nine seedlots of 25 commercial seed, breeding lines, experimental hybrids and related germplasm were germination tested using a pleated paper test, germination in water and germination in hydrogen peroxide. Germination in water showed marked differences among seedlots with high germination under standard (paper or peroxide) conditions. Relative germination percentages in water corresponded with relative field emergence, although absolute values were different.