Relation of Seed and Seedling Characteristics to Stand Establishment of Semidwarf Wheat Selections

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A major aspect of the winter wheat (Triticum aestivum L.) breeding program at Pullman, Washington, is the development of selections with adequate seedling vigor. The recent trend toward early fall deep seeding has magnified stand establishment problems in the Pacific Northwest. Evaluation of large quantities of early generation breeding material for emergence rate and total emergence is not always possible under field conditions. Often, weather conditions may fluctuate radically during the course of a field test and lessen the value of the results obtained. Because of the disadvantages associated with field testing, the development of reproducible laboratory measurements that would measure seedling vigor would be of great benefit. The objective of this study was to evaluate the use of several laboratory measurements conducted on seeds or seedlings of semidwarf winter wheat selections in an attempt to predict field emergence rate and total emergence.

LITERATURE REVIEW

Securing adequate stands from early seedings is particularly difficult for semidwarf wheat selections (1). Unfortunately, information is limited concerning evaluation of seedling vigor of wheat. Work (1) at Pullman, Washington. Published January, 1965...