DONEY, DEVON L. USDA, Agricultural Research Service, P.O. Box 5677 - University Station, Fargo, ND 58105 - <u>Beta</u> <u>germplasm evaluation</u>.

collection and maintenance of Beta germplasm are major The responsibilities of the Sugarbeet Crop Advisory Committee (CAC). Since the establishment of the Sugarbeet CAC in 1983, the Beta collection maintained at Ames, Iowa has experienced significant It is now considered one of the most complete Beta arowth. collections in the world. This extremely valuable collection has little use or impact unless specific information and knowledge about its content is available. Evaluations for specific priority descriptors have been conducted by experts at five locations since 1987. This is a continuing effort largely funded by the USDA-ARS, with significant contributions by the Beet Sugar Development Foundation, American Crystal Sugar Co., and Betaseed, Inc. Although much of the work is considered characterization, specific germplasms for tolerance or resistance to Rhizomania, Erwinia root rot, powdery mildew, and sugarbeet root maggot have been identified. Evaluation data are entered in the USDA Germplasm Resources Information Network (GRIN) where they are made available to the user community throughout the world.

SMUCKER, A. J. M., and J. C. Theurer*. Department of Crop and Soil Sciences, Michigan State University, and USDA, Agricultural Research Service, East Lansing, MI 48824-1325. - <u>Dynamics of fibrous root growth</u> for <u>selected sugarbeet germplasms</u>.

Knowledge of the growth dynamics of fibrous root systems of sugarbeet, <u>Beta</u> <u>vulgaris</u> L., could be an important factor for enhancing production. Root activities of selected sugarbeet germplasms were quantified by the minirhizotron and micro-video camera techniques in field experiments in central Michigan. Root activities are expressed as the number of roots at the surface of minirhizotron tubes to a depth of 130 cm. Genotypes tended to show the greatest variability at approximately 55 days growth. Growth rates of the fibrous roots were greatest for the high yielding cultivar Mono-Hy-E4 and lowest for the high taproot to leaf weight ratio (TLWR) line EL-46 and the smooth root line 85700. The greatest accumulation of fibrous roots on Mono-Hy-E4 moves down through the soil profile with the growing season. In the smooth root line, the greatest number of fibrous roots tended to stay in the top 50 cm of soil. Duration (growth vs. death) was similar over years for both Mono-Hy-E4 and the smooth root line.