Chinese Plants Being Tested at Aberdeen Plant Materials Center

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You may ask, "What in the heck is the PMC doing, testing Chinese plants?" Well, the answer to that question is; to help field offices solve conservation problems utilizing plants. To achieve this goal we continue to search the world over trying to find plants that will help solve conservation problems.

In all seriousness, the temperate arid and semi-arid grasslands of northern China and the Northern Great Plains and Intermountain regions of the U.S. are very similar ecologically, even having some plant communities with some species in common. Also, many grassland plants which are native to the western U.S. are closely related genetically to plants native to northern China. An informal, long-term cooperative relationship between the NRCS Plant Materials Program and the Chinese Grassland Research Institute in Inner Mongolia has been developing since 1988. This has involved the cooperative exchange of plant material and visits by researchers between the two countries. This exchange has allowed for the establishment of inter-center strain trials at Bridger, MT, Pullman, WA, and Aberdeen, ID PMCs.

The Bridger PMC assembled 39 accessions of grasses and 8 accessions of shrubs and legumes which were sent to Aberdeen and planted at the PMC on May 12-13, 1994. The trial was irrigated only to allow establishment and to maintain the plants through the extremely hot and dry summer. Emergence, percent stand (basal cover), plant height, and vigor were evaluated in 1994. In future years, forage yield, in addition to the traits evaluated in 1994 (with the exception of emergence) will be sampled.

The average days to emergence for the grasses was 11 days and 9 days for the shrubs and legumes. Percent stand was evaluated on August 16. The best grass stand was accession no. 9058210 *Elymus dahuricus* (High wildrye). It is interesting to note that the grass accessions with the best stands were *Elymus* species. The best stand in the shrubs and legumes was 'Spredor III' alfalfa.

Plant vigor is rated 1 through 9. A plant rated 1 would be best whereas a 9 rating is very poor. Vigor is defined as the plant health and growth rate. A plant with dark green color, no chlorosis and fast growth is rated 1. The mean vigor rating for the grasses was 4.1 and for the shrubs and legumes was 3.6. Accession no. 9075955 *Elymus cylindricus* (Japanese Wildrye), 9058211 *Elymus exelsus* (High Wildrye), and 9058217 *Stipa grandis* (Big needlegrass) were equal in vigor, averaging 2.3 and had the best vigor of the grasses. Spredor III alfalfa had the best vigor of the shrubs and legumes with a vigor rating of 2.0.

Mean plant height ranged from 8 to 41.0 cm(3.1-16.1 inches) for the grasses and 18.0 to 53.7 cm (7.1-21.1 inches) for the shrubs. *Ceratoides arborscens* (similar to our native winterfat) accession no. 9057950 appears to have promise for use in windbreaks and shelterbelts because of its fast growth and dense growth form.

On August 22 Gu Anlin and Yun Gen Feng, Plant Scientists from Inner Mongolia, China; Larry Holzworth, Plant Materials Specialist, Montana; John Scheetz, Manager, Bridger, Montana Plant Materials Center; Dan Ogle, Idaho Plant Materials Specialist and Gary Young, Manager, Aberdeen Plant Materials Center reviewed the trial as part of a western regional plant materials tour for the Chinese scientists.

If you would like more details of this project, contact Dan Ogle, Plant Materials Specialist or the PMC for a copy of Chinese Inter-center Strain Trial 1994 Progress Report.