

Collection and Evaluation of Forage Germplasm Indigenous to Mongolia

Douglas A. Johnson, USDA-ARS, Forage and Range Research Lab, Utah State Univ., Logan, UT 84322-6300; Sodnomdarjaa Jigjidsuren, Research Institute of Animal Husbandry, Zaisan-53, Ulaanbaatar-210153, Mongolia; Dennis Sheehy, 69086 Allen Canyon Rd., Wallowa, OR 97885; Mark E. Majerus, USDA-NRCS, Bridger Plant Materials Center, 99 South River Road, Route 2, Box 1189, Bridger, MT 59014-9718; Susan R. Winslow, USDA-NRCS, 99 South River Road, Route 2, Box 1189, Bridger, MT 59014-9718; and Larry K. Holzworth, USDA-NRCS, Federal Bldg., Room 443, 10 East Babcock, Bozeman, MT 59715-4704

Mongolia has a diverse flora with many forage species that could play an important role in forage improvement and conservation programs in both the western U.S. and Mongolia. Collaborative germplasm collection trips were undertaken with Mongolian scientists in 1994, 1996, and 1998. A total of 1,374 seed collections were made from the major ecological zones throughout Mongolia. Passport data documenting plant and site characteristics were obtained for each collection, and seed was shared equally between the U.S. and Mongolia. The U.S. seed and accompanying passport data were incorporated into the U.S National Plant Germplasm System where it is available in small quantities to qualified users from around the world. Subsequent funding through the USDA Foreign Agricultural Service and the Food For Progress Program allowed evaluation of the seed collections at 3 sites in Mongolia including a semi-desert site at Buyant, steppe site at Turgen, and forest-steppe site at Batsumber. Replicated trials were established at the sites using direct seeding or greenhouse-grown transplants with or without irrigation. Plots were evaluated for establishment, plant vigor, biomass production, and persistence. The best performing species included: *Bromus inermis*, *Elymus dahuricus*, *Elymus gmelini*, *Elymus sibiricus*, *Stipa krylovii*, *Astragalus adsurgens*, and *Medicago falcata*. In 2003, a book "Forage Plants in Mongolia" was published as part of this project, and an abbreviated booklet for Mongolian herders is being planned for publication in 2004. These collaborations have significantly expanded available forage germplasm resources from Mongolia for forage and conservation uses.