

Forage and Range Research Laboratory: Research in Foreign Nations

Research Activities In China

Project Overview

Scientists at the USDA, ARS Forage and Range Research Laboratory (FRRL) and Utah State University (USU), Logan UT, and Chinese institutions created formal relationships in 2009 to encourage scientific exchange and cooperation in the areas of genetics and ecologically-based management practices related to rangeland, turf, and pasture species (grasses and more recently forbs and legumes). These interactions began in 2008, when the FRRL and USU initiated dialogues to strengthen existing associations and develop new ties with various research institutes in China. After a series of meetings in China (Harbin and Nanjing) during July 2009, the China/ARS/USU Grass Alliance (later shortened to the U.S./Sino Grass Alliance) was formed. Chinese member organizations [Northeast Agricultural University, Inner Mongolia Agricultural University, Harbin Institute of Practacultural Sciences, Northwest A&F University, Botanical Institute in Nanjing, Ningxia Agriculture and Forestry Academy of Research, and Ningxia Eco Agriculture Technology, Ltd. (NEAT)] sought to foster research interactions involving breeding, genetics, physiology, and management practices. Discussions between Alliance members and ARS scientists identified key research objectives that were later formalized in Specific Cooperative Agreements (SCAs) with each Alliance member institution and the FRRL. Since that initial meeting, other research organizations have expressed interest in joining the Alliance (e.g., Xinjiang Agricultural University, Urumqi; China Agricultural University, Beijing; Chinese Academy of Agricultural Science Institute of Animal Science, Beijing), and these relationships are currently being formalized under SCAs.

U.S./Sino Grass Alliance research on plant development and evaluation in western China in 2009 was emphasized and summarized in the 2009 China Ministry of Science and Technology (MOST) annual report. This research has led to the identification of grass germplasm that stabilizes sand dunes in the western deserts of China. Members of the U.S./Sino Grass Alliance planned and convened an international symposium and held a second alliance meeting under the ARS-MOST Protocol in 2010 to further improve scientific associations between Chinese institutions, the FRRL, USU, and the China MOST. The 2010 International Symposium on Forage, Turfgrass and Biofuel Germplasm Research and the second U.S./Sino Grass Alliance meeting were held at the Northwest A & F University in Yangling, China. Ten USDA-ARS scientists and three USU scientists participated in the symposium (9-13 October 2010), which had 188 attendees. Participants exchanged scientific and technical information in five separate sessions related to the collection, curation, and enhancement of germplasm for forage, turfgrass, and biofuels in both oral and poster presentations. A second symposium will be held in the U.S. during 2012.

The scope of the MOST-supported Ningxia Eco Agriculture Technology Ltd. (NEAT) project in western China is expanding. Besides evaluating forage cultivars and elite breeding lines developed at FRRL for adaptation and use in stabilizing degraded semiarid rangelands in Ningxia Province, there is now a U.S. Seed Company (Utah Seeds) which

is developing production contracts with NEAT. The technologies that are being developed through this project have potential use in other regions of China. Specific SCAs and Material Transfer Agreements (MTAs) will be developed in 2010/2011 to test elite grass and legume populations in replicated trials in five non-irrigated growing environments across China from hot, humid sites in eastern China to hot, dry sites in western China. This is the first step towards conducting more comprehensive cooperative research projects.

Short Summary

Scientists at the USDA, ARS Forage and Range Research Laboratory (FRRL) and Utah State University (USU), Logan UT, and nine Chinese institutions created formal relationships in to encourage scientific exchange and cooperation in the areas of genetics and ecologically-based management practices related to rangeland, turf, and pasture species. This association is called the U.S./Sino Grass Alliance (GA) and sponsors research projects in cooperation with the China Ministry of Science and Technology (MOST). This GA interaction and research has led to:

- The identification of grass germplasm that stabilizes sand dunes in the western deserts of China with recent involvement of the U.S. seed industry (2005-2010).
- The 2010 International Symposium on Forage, Turfgrass and Biofuel Germplasm Research and the second U.S./Sino Grass Alliance meeting were held at the Northwest A & F University in Yangling, China (October 2010).
- The second meeting of the U.S./Sino Grass Alliance held in Yangling China (October 2010).
- Specific Cooperative Research Agreements (SCAs) and Material Transfer Agreements (MTAs) between the FRRL and China institutions in 2010/2011 to test elite grass and legume populations in replicated trials in five non-irrigated growing environments across China from hot, humid sites in eastern China to hot, dry sites in western China.