

2005 Accomplishment Report for 2006 PGO
USDA, ARS, National Arid Land Plant Genetic Resource Unit, Parlier, CA

Service:

The site regenerated 2,247 germplasm accessions (77.8% for other NPGS sites; 11% under isolation cages). The perennial nursery was enlarged to a total of over 500 accessions. 97 *Lesquerella* and *Limnanthes* accessions were characterized and data entered to GRIN. Subspecies for 14 *Limnanthes* accessions was identified. Analysis of total oil content in seeds for 95% of *Lesquerella*, 99% of *Limnanthes* and 90% of *Simmondsia* was completed (cooperation with USDA, ARS Maricopa, AZ). A draft of proposed descriptors for *Simmondsia* was submitted to the New Crops CGC for a review. The site distributed over 330 accessions (87% to foreign requestors). A domestic collection for *Parthenium* germplasm resulted in 15 new accessions, the collection will continue in 2006 (funded proposal). An inventory of 4,265 *Limnanthes*, 5,032 *Parthenium* and over 500 *Simmondsia* accessions transferred from the UC system was completed. In *Limnanthes*, only one accession had 0.5% of viable seeds (out of 5% of the *Limnanthes* accessions tested); in *Parthenium*, the seed viability was from 29.5 to 0% (for 149 accessions tested). Both collections came with no passport or field documentation.

Research:

- Genetic diversity of the NPGS Limnanthes germplasm collection measured by SSR markers*; cooperative project with CSUF completed in 2005. Manuscript is in a review.
- Variation in seed production and phenological characteristics in selected accessions of the USDA Limnanthes germplasm collection*. Several traits of 24 different *L. alba* accessions were evaluated in a replicated trial. The 2nd year evaluation was completed. The project will be continued in 2006. The study will provide information to breeders and growers of meadowfoam.
- Evaluation of the USDA Opuntia sp. germplasm collection*. Cladode, flowering and phenological characteristics of over 100 *Opuntia* accessions and fruit quality of 45 different accessions were evaluated. Evaluation of fruit quality will continue in 2006 (last evaluation year). The study will provide information on the NPGS germplasm for nurserymen, small farm growers and the Hispanic, Hmong and Italian heritage home gardeners.
- Evaluation of half-sib garlic family*. Selected economic traits were evaluated in 2 locations (Parlier and Pullman) and compared to the maternal plant (second year completed). Data will be summarized during 2006, and a manuscript prepared for publication. The results will provide information to garlic breeders and researchers and may result in a germplasm release.
- Evaluation of orchardgrass*; cooperative project with USDA, ARS Pullman and Madison, WI. (Breeding non-flowering orchardgrass). First year of observations was completed. The project will be carried out in 2006.

Publications: 2 peer reviewed, 2 abstracts/posters