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La Semilla

A Newsletter from the Tucson Plant Materials Center

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NEWSLETTER FOR THE PMC

The Plant Materials Center has taken on a new look these days. We've got a new Manager (Manuel Rosales), new Assistant Manager (Heather Dial), and one staff member stationed in California (Mary Hershdorfer). Continuing NRCS projects and new reimbursable projects, including several with the National Park Service and one with farmers in the California Mojave Desert, are keeping us as busy as ever. Thanks to our student interns (Cash Veo, Steven Lunt, Steven Bluemer (now graduated), and recently Erin Boyd and Nick Robbs), the farm continues to grow and serve our clients. Special thanks to Bruce Munda, Plant Materials Specialist, and Heather Dial for their assistance while the PMC was in transition.

Heather, Bruce, Mary and introducing... Manuel Rosales as the New PMC manager

TPMC Releases

'Loetta' Arizona cottontop

Saltillo germplasm Cane bluestem

'Stevan' Plains bristlegrass

Cochise germplasm Spike dropseed

Pima germplasm Whiplash pappusgrass

Vegas germplasm Alkali sacaton

Moapa germplasm Alkali muhly

NEW in 2008!

Batamote germplasm

Desert zinnia

Farm Developments

Several new plantings were installed this year. Two of Alkali sacaton (*Sporobolus airoides*): one a reimbursable seed increase for Canyon de Chelly National Park, the other a NRCS intercenter strain trial comparing 4 different plant materials releases, also being evaluated at 3 other PMCs across the country.

An additional 2.25 acres of increase fields of Sand dropseed (*Sporobolus cryptandrus*) were planted this spring to meet the seed requirements for Zion National Park. Now a total of approximately 4 acres, this species holds the largest acreage on the farm.

Current PMC interns Steven, Erin, Nick and Cash

Sand dropseed fields for Zion National Park

The Desert Saltgrass (*Distlichlis spicata*) reimbursable project with the BLM-Las Vegas Office is beginning to shed some light. This typically poor seed producer was planted in 2007 into three replicated crossing blocks with increasing ratios of female to male plants, to investigate the potential for increasing its seed. The six accessions—1 male and 1 female plant collected from three locations in southern Nevada—are being evaluated monthly. One of the accessions has yet to produce seed this year; another example of species diversity in this region.

PMC's Sideoats grama field suspected to be apomictic

The Sideoats grama (*Bouteloua curtipendula*) field planted in 2006 at the PMC is getting a closer look. Last year, a germination study of its 31 accessions suggests that this field does not produce viable seed in its current planting block. All accessions originate from southeast Arizona Major Land Resource Area (MLRA) 41, a region where it has been suspected that an apomictic subspecies exists. Sexual reproduction is rare in apomictic species, due to the varying number of chromosomes in different plants, however, it is suspected that supplemental watering of this field may have triggered these plants to reproduce sexually. A study was initiated last fall to investigate whether the stress of drought would trigger apomictic reproduction of the field. Aside from rain, this field has not been watered since last October. In addition, every two weeks tillers of four accessions have moisture content measured to better gauge the water content of the plants in the field. If they respond to drought stress by producing viable seed, a few individual accessions may be selected from this field to create a new field. The bad news is it would severely decrease the genetic diversity of this composite. The good news is that adapted seed would be available for planting in this region, where Sideoats grama is a critical component of the plant community.

Steven Bluemer collects tiller cuttings in the Sideoats grama

Improved design for production of Zinnia

Heather Dial crouches low like a zinnia plant. Raised beds were not necessary to harvest the seed with the flail vac.

Desert zinnia (*Zinnia acerosa*), released last year as Batamote germplasm, was placed in different planting arrangements at the PMC to improve the seed harvest using the Woodward flail vac seed stripper, Wider row spacing and raised beds were two treatments examined to maximize the seed harvest while minimizing damage to this low-growing forb. Due to limitations of the planter, a third planting was installed with two different row spacings—3.25 ft and 6.25 ft—mistakenly narrower and wider, respectively, than planned. Ironically, this planting made evident the best planting design. Beds were deemed unnecessary, and the narrowest row was sufficiently wide for the flail vac to harvest seed without damaging plants in adjacent rows of the field.

Plant Materials Program Purpose

- Assemble, test, and release plant materials for natural resources conservation,
- Determine techniques for successful use and management of conservation species,
- Facilitate the commercial increase of conservation species,
- Provide for the timely development and transfer of effective applied plant science technology to solve conservation problems,
- Promote the use of plant science technology to meet the goals and objectives of the USDA and NRCS Strategic Plans.

We Are On The Web!!
Http://Plant-Materials.nrcs.usda.gov

Plant Materials Program

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