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La Semilla

A Newsletter from the Tucson Plant Materials Center

Winter 2008

NEWSLETTER FOR THE PMC

With a new well pumping 700 gpm we write from greening pastures (yes, already in February!). We have several other new additions to the farm– two new student interns, Cash Veo (Ag technology management) began in the fall and Alayna Sandford (Range Management) started this spring semester. Also this fall the NRCS Tucson Field Office, Farm Services Agency and Pima Conservation District joined us at the PMC. Luckily all the extra hands were there to help with two large public tours of the farm this winter, starting with Field Day– the first held in 5 years— this November, and tour bus of 80 Park Service employees for a training in January.

Ramona and Mary

TPMC Grass Releases

'Loetta'
Arizona cottontop

Saltillo germplasm
Cane bluestem

'Stevan'
Plains bristlegrass

Cochise germplasm
Spike dropseed

Pima germplasm
Whiplash pappusgrass

Vegas germplasm
Alkali sacaton

N E W in 2007!
Moapa germplasm
Alkali muhly

Farm Developments

The Alkali muhly fields survived the summer! That was the first concern resolved this October when the well flowed again after a 4 month drought. The well was shut off in July to be deepened to 800 ft. After only 3 weeks of this field's establishment, this riparian species survived, giving testament to the durability of native species.

Although not ideal timing, several new fields were planted in November once water was available: Sand dropseed (an increase for Zion National Park), Desert zinnia (a commercial production technology study), and Bush muhly (a composite of 25 collections from within the Sonoran Desert MLRA 30). Some fields seem to have fared better than others. Only after a complete break from dormancy this spring will we know the true impact of the drought to the farm.

Desert zinnia from Southeast Arizona (MLRA 41) is our upcoming release for 2008. It is a promising conservation species for low desert areas of Arizona. This low-growing forb did not allow for the usual harvest with the flail vac. Two designs of increase fields were installed last year to investigate commercial seed harvesting techniques: wider row spacing and planting up on beds.

Team PMC plants Desert zinnia on beds

Establishing Native Diversity into Lovegrass Infestation

In 2006 a study was established at the Appleton-Whittle Audubon Research Ranch in Elgin, AZ to investigate the potential for establishing islands of native diversity into stands of Boer lovegrass, an invasive, exotic grass increasing in southern Arizona. Four treatments were replicated four times into a grid pattern:

—Herbicide, Mowing & Seeding
—Mowing and Seeding
—Seeding only
—Control

5% Roundup solution was applied on 4 of the 16 plots, and seed—harvested from the ranch the year before– was drilled into 12 of the plots.

A second year of monitoring took place this fall. Preliminary results reveal that herbicide-treated plots had significantly greater species composition and native seedling establishment. However, the sprayed plots also had greater numbers of exotic seedlings— Boer lovegrass as well as Lehmann lovegrass—another exotic grass increasing on the ranch, and perhaps a greater threat to native rangelands in southern Arizona and beyond.

Continued monitoring of these plots will determine whether islands of native species persist or exotic species eventually overwhelm all plots.

The study's treatment grid is visible after spraying

Native Seed Hay Bales for Restoration

Tucson PMC, Tucson Field Office and the Babocomari Ranch collaborate—and control— the mulch spreader.

Out of the initial results of the Boer lovegrass study (story above), a second attempt was made during the summer of 2007 to establish natives into a site exposed to exotic lovegrasses— this time without the disturbance of a seed drill. Native seed hay bales were spread across the site instead of drilling seed. Hay bales provide a promising new approach for restoration, having both seed and mulch.

These hay bales were harvested from a mixed species field planted at the PMC from seed originating from the Appleton-Whittle Research Ranch. As in the Boer lovegrass study, adaptation of the seed was not in question, because this planting took place on the Babocomari Ranch, a neighbor of the Appleton-Whittle.

Plant Materials Program Purpose

- Assemble, test, and release plant materials for 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