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A Newsletter for the Tucson Plant Materials Center ☀ Fall 2013

Greetings from Tucson!

Summer temperatures this year have been extreme, even for Tucson. The National Weather Service Forecast Office reported that June 2013 was the hottest June on record with each day reaching triple digit highs. The consecutive triple digit streak was not broken until July 10th when temperatures fell back to 98°F. The staff at the PMC kept on keeping on through the record breaking heat with several new projects. Read on and stop by and see us sometime!

Sincerely, The Tucson PMC Staff



PMC Releases

'Loetta' Arizona cottontop
(*Digitaria californica*)

Saltillo Origin Germplasm
cane bluestem
(*Bothriochloa barbinodis*)

'Stevan' plains bristlegrass
(*Setaria leucopila*)

Cochise Germplasm spike dropseed
(*Sporobolus contractus*)

Pima Germplasm whiplash pappusgrass
(*Pappaphorum vaginatum*)

Vegas germplasm alkali sacaton
(*Sporobolus airoides*)

Moapa Germplasm scratchgrass
(*Muhlenbergia asperifolia*)

Batamote Germplasm desert zinnia
(*Zinnia acerosa*)

Bonita Germplasm plains lovegrass
(*Eragrostis intermedia*)

Farm Developments

Cover Crop Trials

In July, PMC personnel planted four different varieties of summer cover crop to determine which cover crops currently available will work best in common crop rotations used in the Tucson PMC service area. In addition, the trials will be used to measure the effects of the cover crops on soil health. The cover crops planted include 'Iron and Clay' cowpeas, 'Stonewall' soybeans, 'OK2000' mungbeans and 'Sordan 79 headless' sorghum-sudan grass.

Cover crops help improve soil health by reducing erosion; increasing soil organic matter content; improving air and water movement through soil;

reducing soil compaction; capturing and recycling nutrients in the soil profile; managing soil moisture and in the case of leguminous cover crop species, promoting biological nitrogen fixation.



Figure 1: Mung bean seedling approximately three weeks old

Prior to planting the cover crops, soil scientists from the Tucson Soil Survey office tested the chemical, physical and biological properties of the soil. PMC personnel used the Soil Quality Test kit to test for soil respiration, infiltration, bulk density, electrical conductivity, soil pH and soil nitrate. Soil samples were also sent to a local lab for analysis of plant available nutrient levels, salinity, organic matter and exchangeable cations. PMC staff will compare results from all three sources to gauge the accuracy of each method. These properties will be measured again at the conclusion of the growing season of the cover crops.



Figure 2: The cowpea field approximately three weeks old

Other parameters that will be measured as the trial progresses include: water use, biomass production and weed suppression. The summer cover crops will be terminated in the fall of 2013 with a roller-crimper.

Herbaceous Wind Barrier Trials

At the September 2012 Arizona State Plant Materials Committee meeting, several field offices requested information, training and/or trials on the use of herbaceous wind barriers. The PMC responded by installing a demonstration herbaceous wind barrier using the Los Lunas PMC release “Windbreaker” big sacaton (*Sporobolus wrightii*) on the farm. PMC personnel also produced several containerized big sacaton plants

for trial installation and demonstration with cooperators at four field offices.



Figure 3: PMC Manager, Manuel Rosales, with some of the containerized ‘Windbreaker’ big sacaton grown for trials

People’s Garden

In April, PMC personnel installed a People’s Garden in collaboration with the Tucson Field office and the Pima Natural Resources Conservation District. The People’s Garden Initiative, named in honor of President Lincoln’s description of the USDA as the “People’s Department”, is an effort by the USDA to challenge its employees to establish People’s Gardens at USDA facilities worldwide or to help communities create gardens.



Figure 4: Squashes and melons ready for donation.

The majority of the seeds used to establish the garden were heirloom varieties traditionally used by Native American farmers in the Southwest. The PMC planted heirloom varieties to promote their use in the effort to preserve their heritage, culture, and genetic plant diversity for future generations. Some examples of the produce planted include: Tohono O’odham yellow meated watermelons, Navajo red seeded watermelons, Tohono O’odham “Ha:l” squash and Yuman Yellow sweet corn.

To date, the Tucson PMC and collaborators have donated over 1000 pounds of fresh produce to local food banks.



Figure 5: Bruce Munda, Arizona Plant Materials Specialist, with a squash produced in our People’s Garden

Earth Day

In celebration of Earth Day, the city of Tucson has an Earth Day festival each year. This year, PMC personnel manned a booth to discuss with festival participants the importance of native plants and pollinators.

Interested booth visitors were given a small packet of Cochise Germplasm spike dropseed for home use.



Figure 6: PMC personnel speak with visitors to the PMC booth

Personnel



Erin Boyd, a PMC intern since 2009, has graduated and has accepted a position as a Range Conservationist in Holbrook, AZ. We will miss her and wish her the best!



Frankie Keyes, a new Earth Team volunteer at the PMC, has proved himself to be an indispensable team member. Thank you Frankie!

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