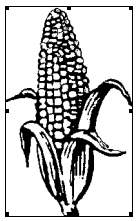

Maize Genetics Cooperation • Stock Center

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13,185 seed samples have been supplied in response to 299 requests for 2009. These include 85 requests received from 24 foreign countries. Popular stock requests include the NAM RIL populations, Hi-II lines, *ig1* lines, Stock 6 haploid-inducing lines, male sterile cytoplasms, transposable element lines (including the UniforMu sequence indexed stocks), and Maize Inflorescence Project EMS lines.

Approximately 5.7 acres of nursery were grown this summer at the Crop Sciences Research & Education Center located at the University of Illinois. A cool, wet spring necessitated the planting of our crossing nurseries about two weeks behind schedule. Smaller than normal stands were observed in our first crossing nursery due to soil compaction caused by heavy rains. Seedling predation by redwing blackbirds reduced the stands in our second crossing nursery. Despite the reduced stands, there were sufficient plants for an adequate increase in most instances. Seasonable to above normal rainfall patterns were established, and we had a normal pollination season without the need for supplemental irrigation. Moderate temperatures and low plant stress during and following pollination resulted in excellent yields.

Special plantings were made of several categories of stocks:

1. Plantings were made of donated stocks from the collections of James Brewbaker (Hi27 near-isogenic mutant lines), Wayne Carlson (various Chromosome 9/B Chromosome rearrangements), Tom Brutnell (*bsd2-m1*), Jerry Kermicle (various *r1* alleles), Jane Langdale (various photosynthetic and developmental mutants), Gerry Neuffer (recent EMS-induced mutants), Marcus Rhoades (*DfK10(I)*), Peter Rogowsky (*bt2-H2328*), Pat Schnable (*rth3-3*), and others. We expect to receive additional accessions of stocks from maize geneticists within the upcoming year.

2. We conducted allelism tests of several categories of mutants with similar phenotype or chromosome location. We identified additional alleles of *pink scutelum1, viviparous1, viviparous2, chlorophyll1*, and *pale yellow9*. In 2010, we plan to continue testing additional members of the viviparous and pale endosperm classes of mutants. In this manner, we hope to incorporate more stocks from our vast collection of unplaced uncharacterized (phenotype-only) mutants into the main collection.

3. Occasionally, requestors bring to our attention stocks that do not carry the traits they are purported to carry. We devote field space each year to analyzing these stocks, fixing or enhancing those we can, and soliciting replacements from researchers for those we can't. In those rare instances in which a particular variation or combination of variations cannot be recovered, we modify our catalog to reflect this.

4. We are continuing to characterize the *Enr* (*Fcu*) system of *r1* aleurone color enhancers as well as other factors that affect expression of *r1*. We are characterizing additional alleles of *Enr1* and other *r1* aleurone color enhancers.

5. Samples of 486 phenotype–only stocks were sent to the National Center for Genetic Resources Preservation in Fort Collins, Colorado for back up. 655 stocks from the main collection not yet backed up were also sent this year. Our new inventory system has made

selecting ears to be sent and producing a packing list to accompany them a much more efficient procedure.

6. Despite reduced stands, fresh increases were made of many older A-A translocation stocks. The outcrosses will be grown out in 2010 Observation to confirm by seed set which ones actually carry the translocation. We continued checking translocations received from W. R. Findley and Don Robertson marked with *wx*1 to confirm the chromosome arms involved. For those where we found no linkage, all sources were discarded.

7. Stocks produced from the NSF project "Regulation of Maize Inflorescence Architecture" (see: https://www.fastlane.nsf.gov/servlet/showaward?award=0110189) were grown again this summer. Approximately 300 families of M2 materials that were produced in 2006 and 2007 were grown to increase seed supplies and recover previously observed mutations. Also, 1,642 families of 2007 and 2008 EMS seed increase materials were grown for adult plant observation; the materials observed include mutated B73 and Mo17 inbred lines and the B73xMo17 hybrid.

We did not have sufficient funds in our budget to grow a winter crop in Puerto Rico during the 2008/2009 growing season; however, this year we are growing a winter nursery of 0.5 acres at the Illinois Crop Improvement Association's facilities in Juana Díaz, Puerto Rico. This may be the last year we have sufficient funds for a winter nursery.

Our IT Specialist has continued to make updates and improvements to our curation tools, which are used to maintain data for our collection. These tools input our public stock data directly into MaizeGDB to give maize scientists access to up-to-date information about our collection. The tools are also used for our internal database (*e.g.,* inventory, pedigrees and requests). A tool to find and correct parent family information in our pedigree data was written, tested and used successfully. Currently, a more advanced search tool is being written in order to allow more flexibility in locating specific items in our inventory. Improvements have been made to the pedigree input tool in order to fix some problems with certain types of entries. Maintenance continues on our web site (http://www.uiuc.edu/ph/www/maize).

The new greenhouse space in Urbana is being used for our fourth winter crop. The space has proven to be excellent for growing material that doesn't do well under our field conditions. Our new seed storage space presently has 990 seed storage drawers of the 1,584 the room will eventually hold (pending funding).

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Director	Curator	Biol Res Tech (Plants)	Agric Sci Res Tech (Plants)	Information Tech Specialist