



Maize Genetics Cooperation • Stock Center

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9,151 seed samples have been supplied in response to 458 requests for 2018 (until the shut-down in late December). These include 231 requests received from 22 foreign countries. Interest in reverse genetics tools, such as the UniformMu sequence indexed stocks, remains high and steady. Presently, requests for UniformMu stocks represent approximately 60% of our total requests. Other popular stock requests include the NAM RILs and other mapping populations, Ac/Ds sequence indexed stocks, Hi-II lines, haploid-inducing lines, male sterile cytoplasms, Fast-flowering mini-maize, kernel starch quality traits, plant architecture traits, and Maize Inflorescence Project EMS lines.

Approximately 4.0 acres of nursery were grown this summer at the Crop Sciences Research & Education Center located at the University of Illinois. Warm, dry spring weather allowed us to plant both of our crossing nurseries in a timely manner. Excellent weather during the remainder of the growing season allowed for good germination in our crossing nurseries, as well as a normal pollination season; no supplemental irrigation was required, although we did irrigate our second crossing nursery to deter birds from pulling up seedlings through loose soil. There were sufficient stands for a good increase in almost all instances.

Special plantings were made of several categories of stocks:

1. Plantings were made of donated stocks from the collections of Alice Barkan (22 photosynthetic mutant alleles), Norman Best (*ali1* alleles), David Braun (*sut1-m4*), Hugo Dooner (*apt1*, *bz1*, and *nut1* alleles), Andrea Gallavotti (*ad1*, *rel2*, *rte1*, *rte2*, *spi1*, and *ts1* alleles), Sarah Hake (*gif1* alleles), Gerry Rohde (*atg12* alleles), and others. We expect to receive additional accessions of stocks from maize geneticists within the upcoming year.
2. We are continuing to characterize enhancers of yellow endosperm color from PI accessions of orange endosperm tropical flints and are continuing collaborations to identify the specific gene products associated with previously uncharacterized (or incompletely characterized) white endosperm/albino seedling loci. We continue collaborations to characterize a colored pericarp crown variant from a GEM line that is unlinked to *p1*. Through tests of allelism, we identified new alleles of *shrunk6* and *albesc1*. Additional tests of allelism of stocks from our Phenotype Only collection are in progress.
3. Due to lack of personnel, we continue to provide only bare-bones curation of the A-A translocation stocks and other chromosomal aberration stocks that were previously maintained by Janet Day Jackson. In most instances, we have stopped propagating them, but we will continue to provide seeds on request until they lose viability.
4. Stocks produced from the NSF project "Regulation of maize inflorescence architecture" (see: <http://www.maizegdb.org/MIP/>) were grown again this summer. Approximately 300 families of M2 materials that were produced between 2006 and 2013 were grown to increase seed supplies and recover previously observed mutations; this also included previously phenotyped families that had limited seed supplies. In addition, 1,070 families of 2016 and 2017 EMS seed increase materials were grown for adult plant observation and 191 families were screened in sand benches for seedling traits; the materials observed include mutated

A619, B73 and Mo17 inbred lines, Mo17xA632 and B73xMo17 hybrid, and various other inbred lines.

5. Critical plantings of a limited number of stocks were made in our greenhouse facilities.

We currently have 14,033 UniformMu sequence indexed stocks, produced by the "Construction of comprehensive sequence indexed transposon resources for maize" project (see: <http://www.maizegdb.org/documentation/uniformmu>). We have also recently received 1,315 maize-teosinte BC₁S₄ population stocks from John Doebly (described in: Guo, L et al. 2018. *Curr Biol* 28: 3005-3015). An additional 2,215 lines of tdsg stocks from the "Ac/Ds reverse genetics resource" project (see: <http://acdsinsertions.org>) were added to our previous collection.

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 and our local database to give maize scientists access to up-to-date information about our collection. The current tools are basically in "maintenance mode" while work continues on a new implementation of the curation tools. Work is progressing nicely on a procedure to migrate our data from MySQL to PostgreSQL, and migration of our tools will follow soon after. Once that's done, work can commence on unified tools. Maintenance continues on our web site (<http://www.uiuc.edu/ph/www/maize>).

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Director

Philip Stinard
Curator

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ADDITIONS TO OUR CATALOG OF STOCKS SINCE MNL91

(For a complete list of our stocks, see: <http://maizegdb.org/cgi-bin/stockcatalog.cgi>)

Chromosome 1 Markers

109F ad1-224
135E rte1-1
135F rte1-2
135G dcl101-fzt
136B cps1-2

Chromosome 2 Markers

239D prin2-1
239E prin2-2

Chromosome 3 Markers

302D rte2-2
339L ptac12-2::Mu
345B csr1-3::Mu1

Chromosome 5 Markers

532H na2-2
536A otp51-2
536B otp51-3
536C orrm1-1
536D orrm1-2

Chromosome 7 Markers

720A crp4-1::Mu
726F ptac2-1
726G ptac2-3

Chromosome 8 Markers

807B mterf4-1
 807C mterf4-2
 807D ptac10-1
 807E ptac10-2

Chromosome 9 Markers

939E murE1-2
 939F murE1-1
 944A sh1 bz1-s39.8 stk1-4
 944B bz1-m039::Jittery
 944C bz1-X3:rMx; No Mx
 944D bz1-R; Mx
 944E bz1-M175::TED
 944F apt1-m1::Ac bz1-m2(DI)::Ds
 944G nut1-m::Ac bz1-m2(DI)::Ds
 944H bz1-m18
 944I bz1-m22
 944J bz1-m26
 944K bz1-m28
 944L bz1-wm29
 944M bz1-m33
 944N bz1-m39
 944O bz1-m45
 944P bz1-W22n1
 944Q bz1-B73:E4
 944R bz1-B73:E6
 944S bz1-B73:E7
 944T bz1-B73:E8
 944U bz1-B73:E9
 944V bz1-B73:E11

Chromosome 10 Markers

X37Q w2-mum1
 X37R w2-mum2

Stocks Characterized Only by Phenotype:

barren inflorescence

6609R bif*-04MO-A619xB73GN-277
 6711A bif*-03HI-B73xMo17GN-1132
 6711B bif*-03HI-B73xMo17GN-1191

barren stalk

6610F ba*-07MO-B73xMo17GN-388

brittle endosperm

6408N bt*-04MO-B73xMo17GN-38
 6408O bt*-04MO-B73xMo17GN-152
 6408P bt*-04MO-B73xMo17GN-248

defective kernel

6702I dek*-04HI-A619xB73GN-26

dwarf plant

5506S d*-03HI-B73xMo17GN-292

fasciated ear

6512E fea*-07IL-B73GN-504

6512Q fea*-04HI-Oh43xA632GN-33

loose pericarp

5810I lsp*-06HI-B73GN-44

miniature kernel

6408M mn*-04MO-B73xMo17GN-21

nana plant

na*-07IL-B73GN-98

pale yellow endosperm

5703Q y*-07IL-B73GN-103

6702H y*-04MO-A619xB73GN-25

striate leaf

6506J str*-03HI-B73xMo17GN-528

6511P sr*-06HI-B73GN-88

subtending ear

6609S ste*-SGL-171

sugary kernel

5712B su*-M2-92-524

tassel branch number variation

6711C fbr*-04HI-Oh43xA632GN-206

tassel seed

6711D ts*-03HI-B73xMo17GN-654

tasselless

6510R tl*-03HI-B73xMo17GN-762

viviparous kernel

6702K y-vp*-03IL-A619TR-55

6702J vp*-04MO-B73xMo17GN-46

6702K y-vp*-03IL-A619TR-55

6702L y-vp*-03IL-A619TR-87

6702M vp*-04HI-A632xOh43GN-80

waxy endosperm

6405E wx*-04HI-A619XB73GN-67

white luteus seedling

4111Q wl*-03IL-A619TR-5

white stripe leaf

6511Q wst*-04HI-A632TR-64

white stripe leaf (japonica-like)

6511O j*-06HI-B73GN-138

wilted plant

6513R wi*-03HI-B73xMo17GN-467

yellow green leaf

6516A yg*-04MO-A619xB73GN-226

Additionally, we now have:

New sequence indexed stocks (tdsg; from Hugo Dooner)
TeoNam-pops W22 x TIL BC1S4 - Developed by John Doebley