Maize Genetics Cooperation • Stock Center

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&
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5,902 seed samples have been supplied in response to 602 requests for 2016. These include 341 requests received from 28 foreign countries. This is the sixth record-breaking year in a row for requests; and greatly exceeded the previous annual record of 519. Interest in reverse genetics tools, such as the UniformMu sequence indexed stocks, continues to grow. Presently, requests for UniformMu stocks represent more than 62% 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, kernel starch quality traits, plant architecture traits, and Maize Inflorescence Project EMS lines.

Approximately 5.5 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 a timely manner, and excellent weather during the growing season allowed for a normal pollination season; no supplemental irrigation was required. There were sufficient stands for a good increase in amost all instances; however, a late July wind storm removed a few rows in their entirety. Those lines will be regrown in our winter greenhouse or next summer's nursery. Excessive moisture during the late summer and early fall resulted in higher rates of ear rot in susceptible genotypes, but there were no complete losses for any line. Moderate temperatures and low plant stress resulted in excellent yields from most pollinations.

Special plantings were made of several categories of stocks:

1. Plantings were made of donated stocks from the collections of James Brewbaker (*br2-CM104*), Hugo Dooner (*Bz1-W22*), Susan Gabay-Laughnan (Oh51a *mito-N*), Andrea Gallavotti (*rte1-4*), Jerry Kermicle (*Ga2-m:102-13b*), Morgan McCaw (Fast Flowering Mini-Maize Line A *y1* and *R1-scm2* conversions), Steve Moose (IBM RI M0068), Ron Okagaki (*r1-r:n19 mdr1*), Katharine Petsch (*rgd1-lbl1*), 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 are also characterizing a colored pericarp crown variant from a GEM line that is unlinked to *p1*. Through tests of allelism, we identified a new allele at the *v27* locus. We also confirmed the integrity of our *A1 sh2* stock. 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. We are continuing to grow up recent outcrosses of translocation stocks in our observation fields to score for male and female semisterility. We also had room to increase inversion stocks that had not been grown since 2002.

4. Stocks produced from the NSF project "Regulation of maize inflorescence architecture" (see: http://www.maizegdb.org/MIP/) were grown again this summer. Approximately 250 families of M2 materials that were produced between 2003 and 2007 were grown to increase seed supplies and recover previously observed mutations; this also included previously

phenotyped families that had limited seed supplies. In addition, 2,080 families of 2014 and 2015 EMS seed increase materials were grown for adult plant observation and 426 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 58 stocks from the "Maize CellGenomics" project (http://maize.jcvi.org/cellgenomics/). An additional 3,484 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. The current main focus is on unifying databases for common information shared by our group and MaizeGDB personel, which will cut down tremendously the manual manipulation of data sometimes required to make sure our databases stay in sync, and allow us to write unified tools more easily. Maintenance continues on our web site (http://www.uiuc.edu/ph/www/maize).

Marty Sachs	Philip Stinard	Shane Zimmerman	Josh Tolbert
Director	Curator	Agric Sci Res Tech (Plants)	Information Tech Specialist

ADDITIONS TO OUR CATALOG OF STOCKS SINCE MNL89

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

Chromosome 1 Markers
101H brk2-1
104J pan1-Mu

Chromosome 2 Markers
204CB wab1-bad1-1

Chromosome 3 Markers
310J na1-5
320F A1 sh2; A2 C1 C2 R1 b1 pl1
339F rdr6-1
339G te1-8

Chromosome 4 Markers
406H la1-MM1901

Chromosome 5 Markers
502I brk1-1
506E na2-4
506O na2-6
511N Ga2-m:102-13b
532I na2-5

Chromosome 7 Markers
726E Abph2-ref

Chromosome 9 Markers
932A Bz1-W22

Chromosome 10 Markers
X13GA R1-p I-Rp
X37K r1-r:n19 mdr1
X37L r1-g mot1 mot2

Toolkit
AcDs-00000 r1-sc:m3::Ds; A1 A2 C1 C2 ^W22 (Brutnell's AcDs source parent)
CSHL-FP001 Tubulin-YFP event #7 translational fusion
CSHL-FP002 Tubulin-YFP event #25 translational fusion
CSHL-FP003 Tubulin-YFP event #6 translational fusion
CSHL-FP004 Tonoplast Intrinsic Protein-YFP event #1-4 translational fusion
CSHL-FP005 Tonoplast Intrinsic Protein-YFP event #1-3 translational fusion
CSHL-FP006 Tonoplast Intrinsic Protein-YFP event #15-10 translational fusion
CSHL-FP007 PINFORMED1-YFP event #1 translational fusion
CSHL-FP008 PINFORMED1-YFP event #2 translational fusion
CSHL-FP009 PINFORMED1-YFP event #3 translational fusion
CSHL-FP010 DR5-RFPer event #1 promoter fusion
CSHL-FP011 DR5-RFPer event #2 promoter fusion
CSHL-FP012 DR5-RFPer event #3 promoter fusion
CSHL-FP013 TCSv2-tdTomator event #1 promoter fusion
CSHL-FP014 TCSv2-tdTomator event #2 promoter fusion
CSHL-FP015 TCSv2-tdTomator event #3 promoter fusion
CSHL-FP016 pUBI-PDLP1a-YFP event #1 translational fusion
CSHL-FP017 pUBI-PDLP1a-YFP event #7 translational fusion
CSHL-FP018 pSUT1-GFP event #19 promoter fusion
CSHL-FP019 pSUT1-GFP event #29 promoter fusion
CSHL-FP020 pSUT1-GFP event #34 promoter fusion
CSHL-FP021 pSUT1-RFPer event #2 promoter fusion
CSHL-FP022 pSUT1-RFPer event #11 promoter fusion
CSHL-FP023 pSUT1-RFPer event #16 promoter fusion
CSHL-FP024 pSUT2-GFP event #32 promoter fusion
CSHL-FP025 pSUT2-RFPer event #8 promoter fusion
CSHL-FP026 pSUT2-RFPer event #21 promoter fusion
CSHL-FP027 pSUT2-RFPer event #29 promoter fusion
CSHL-FP028 SUT1-YFP event #5 translational fusion
CSHL-FP029 SUT1-YFP event #6 translational fusion
CSHL-FP030 SUT1-YFP event #9 translational fusion
CSHL-FP031 pUBI-YFP event #1 promoter fusion
CSHL-FP032 pUBI-YFP event #22 promoter fusion
CSHL-FP033 pUBI-YFP event #6 promoter fusion
CSHL-FP034 pUBIQUITIN-mCherry event #1 promoter fusion
CSHL-FP035 pUBIQUITIN-mCherry event #2 promoter fusion
CSHL-FP036 pUBIQUITIN-mCherry event #3 promoter fusion
CSHL-FP037 pUBIQUITIN-mTFP1 event #1 promoter fusion
CSHL-FP038 pUBIQUITIN-mTFP1 event #2 promoter fusion
CSHL-FP039 pUBIQUITIN-tagRFP-t event #1 promoter fusion
CSHL-FP040 pUBIQUITIN-tagRFP-t event #2 promoter fusion
CSHL-FP041 abphyl1-RFP event #9 translational fusion

CSHL-FP042 abphyl1-RFP event #19 translational fusion
CSHL-FP043 malate dehydrogenase-YFP event #3 translational fusion
CSHL-FP044 malate dehydrogenase-YFP event #8 translational fusion
CSHL-FP045 malate dehydrogenase-YFP event #7 translational fusion
CSHL-FP046 histone H1B-YFP event #1 translational fusion
CSHL-FP047 histone H1B-YFP event #2 translational fusion
CSHL-FP048 Flavonol Synthase-RFP event #1 translational fusion
CSHL-FP049 Flavonol Synthase-RFP event #3 translational fusion
CSHL-FP050 Flavonol Synthase-RFP event #6 translational fusion
CSHL-FP051 grassy tillers-YFP event #1 translational fusion
CSHL-FP052 grassy tillers-YFP event #2 translational fusion
CSHL-FP053 grassy tillers-YFP event #3 translational fusion
CSHL-FP054 LAZY1-YFP event #7 translational fusion
CSHL-FP055 LAZY1-YFP event #17 translational fusion
CSHL-FP056 RPL18-GFP event #3 translational fusion
CSHL-FP057 RPL18-GFP event #5 translational fusion
CSHL-FP058 RPL18-GFP event #6 translational fusion

Stocks Characterized Only by Phenotype:

absence of leaf blade
6510K blk*-04HI-A632xOh43GN-155
6510M blk*-04HI-Oh43xA632GN-168

adherent leaf
6513K ad*-04HI-A632TR-52
6513N ad*-04HI-Oh43xA632GN-145

adherent tassel
6513E ad*-04HI-A632GN-58

albescent
6412G al*-04HI-Oh43xA632GN-74
6412H al*-04HI-Oh43xA632GN-260
6412I al*-04MO-A619xB73GN-90
6412J al*-04HI-Oh43xA632GN-200
6412L al*-04HI-A632GN-183

albino seedling
6412K al*-04HI-Mo17xA632GN-53

barren ear
6514J ba*-04HI-A632GN-161

barren inflorescence
6514K bif*-07MO-B73XMO17GN-489
6609D bif*-04HI-Mo17xA632GN-128
6609H bif*-04HI-A632GN-161

crossbanded leaf
4311E cb*-03HI-B73GN-295

dwarf plant
5506R d*-03HI-B73xMo17GN-776

fasciated ear
6512M fea*-04MO-A619xB73GN-3
6512O fea*-04MO-A619xB73GN-34
6512P fea*-04HI-A619xB73GN-67
6709A fea*-04HI-A632xOh43GN-316
6709B fea*-04HI-A619xB73GN-148

lazy plant
6611C la*-04MO-A619xB73GN-20
6611D la*-04HI-Oh43xA632GN-5

lesion
6607E les*-06HI-B73GN-113

luteus yellow seedling
5912S l*-07MO-B73xMo17GN-298

male sterile
6514I ms*-04HI-A632GN-34

nana plant
6509O na*-04HI-A619xB73GN-65

narrow leaf
6510N nl*-03IL-A619TR-67
6510O nl*-04HI-A619xB73GN-45

necrotic leaf
6611E nec*-04HI-A619xB73GN-198
6611F nec*-07IL-B73GN-4

necrotic leaf tips
6611G nec*-03IL-A619TR-106

oil yellow plant
3811Q oy*-04HI-A619xB73GN-49
6009H oy*-04HI-A619xB73GN-179

polytypic ear
6709C pt*-03IL-A619TR-864

ragged leaf
6513L rg*-04HI-A619xB73GN-12
6513M rg*-04HI-A632xOh43GN-225

ragged seedling
6513O pg-rg*-04HI-A632xOh43GN-76

reduced tassel branch number
6609E fbr*-03IL-A619TR-1081
6609J rtb*-04MO-A619xB73GN-42

semidwarf
6411F sdw*-04HI-Mo17xA632GN-52

shredded leaf
6608F shr*-04HI-A619xB73GN-18

shrunken kernel
5811L sh*-06HI-B73GN-43
5811O sh*-07IL-B73GN-118
6410O sh*-03IL-A619TR-101

striate leaf
3709P sr*-07IL-B73GN-178
6511J sr*-04MO-A632xB73GN-17

subtending tassel
6609M stt*-SGLMo17

sugary kernel
6410N su*-07IL-Mo17GN-2

tassel seed
6609B ts*-06HI-B73GN-108
6609I ts*-07MO-B73xMo17GN-275
6609K ts*-04HI-Oh43xA632GN-145

tassel sheath
6512K tsh*-03IL-A619TR-592

terminal ear
5405L tel*-122A6
6514L te*-03HI-B73GN-249

unbranched tassel
6609F ub*-04HI-A619xB73GN-198
6609G ub*-04HI-A632xOh43GN-341

white stripe leaf (iojap-like)
6511G ij*-07IL-B73GN-425

yellow green leaf
6515Q yg*-04MO-A619xB73GN-323
6516O yg*-07IL-B73GN-296

yellow stripe leaf
6505L ys*-07MO-B73xMo17GN-180

zebra necrotic leaf
6515R zb-nec*-03IL-A619TR-3

Additionally, we now have: the NyH Ny821xH99 and OhW Oh43xW64A RILs