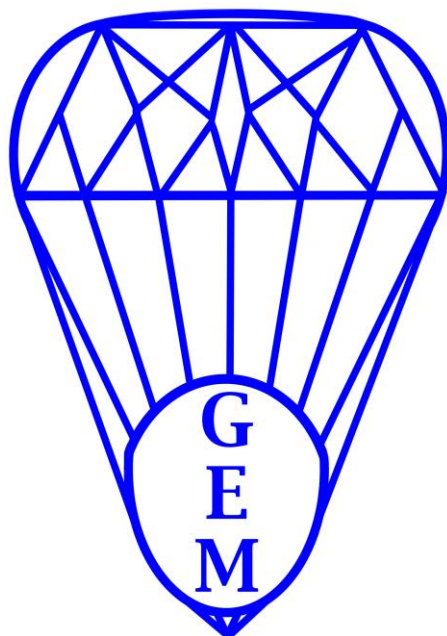


United States Department of Agriculture

Agricultural Research Service



Germplasm Enhancement of Maize

2017 GEM Cooperator Booklet

December 6th 2017

The information in this report is shared cooperatively.
The data are not published, but are presented with the understanding that
they will not be used in publications without specific consent of the public cooperator.

GEM Mission:

The mission of the GEM (Germplasm Enhancement of Maize) Project is to effectively increase the diversity of U.S. maize germplasm utilized by producers, global end-users and consumers. The mission will be achieved through a collaborative effort between USDA-ARS, and both public and private research scientists by utilizing exotic, public, and proprietary maize germplasm. The resulting germplasm and associated knowledge, derived via the identification and incorporation of favorable alleles for prioritized traits from exotic sources, is utilized in private and public breeding programs and ultimately contributes to increased genetic diversity of maize grown by producers and improved product performance. In addition, the GEM Project provides opportunities for training plant scientists in the enhancement and utilization of unadapted germplasm. This contributes to the global sustainability of agricultural production, economic stability, and the nutrition and well-being of society.

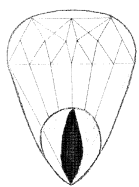
GEM Cooperator Meeting Booklet

Table of Contents

Cooperator Agenda	i
Minutes: Cooperator December 7, 2016	iii
Allelic Diversity	
Table 1 (Total AD Races by Country)	Page 1
Table 2 (AD Completed as of Dec 2016)	Page 2
Table 3 (DH1 Lines Advanced to DH2)	Page 3
Breeding Crosses	
2016 GEM Raleigh, NC Breeding Cross Observations	
Inbred x Inbred	Page 5
Observation Notes	Page 15
2017 Breeding Cross Observations - GEM Ames	Page 17
Ames Annual Report	Page 21
Highlights	
Nursery Activities	
Yield Trial Summary	
In-King Support	
2018 Program Goals	
Raleigh Annual Report	Page 29
Highlights	
2017 Request	
GEM Releases	
Released Line Summary (Ames)	Page 35
Performance Summaries (Ames)	Page 38
Racial Background of Releases	Page 45
GEM Germplasm Releases	Page 46
Yield Trials	
Raleigh Yield Trials	Page 51
2017 GEM Ames Yield Trial Summary	Page 59
Ames Yield Trials	Page 60

GEM WEBSITE

<http://www.public.iastate.edu/~usda-gem/>



**Germplasm
Enhancement of
Maize**

Cooperator Meeting:

DATE: December 6, 2017
HOURL: 8:30 – 12:00 AM
LOCATION: Regency Ball Room D
 Hyatt Regency Hotel, Chicago

Meeting called by: W. Trevisan, GEM Technical Steering Group Chair

Agenda Topics

Welcome, and Minutes of Dec 7, 2016	W. Trevisan, Chair & Moderator	8:30-8:35
Project updates: GEM releases, breeding cross evaluations, germplasm input request	D. Peters, M. Krakowsky	8:35-8:55
GEM Top 10 Project	G. Sronic, DowDuPont; Project Participants	8:55 – 9:15
GEM Top 10 Project, Disease Evaluations	I. Amusan, AgReliant	9:15-9:25
Bag Tag Survey	W. Tracy, Univ. Wisconsin-Madison	9:25 – 9:35
Maize Genetic Diversity & Commercial Breeding Programs	G. Graham, DowDuPont; JD Rossouw, Monsanto; D. Dyer, Syngenta	9:35 – 10:35
Break		10:35-10:50
Shawn Kaeppler - Update on G2F Objectives with Respect to Maize Diversity	S. Kaeppler, Univ. Wisconsin-Madison	10:50 – 11:05
Exploring the Genotype-Phenotype Landscape for Germplasm	J. Yu, Iowa State Univ.	11:05-11:45
Discussion		11:45 - 12:00
Adjourn	W. Trevisan	12:00

GEM Cooperators Meeting
December 7, 2016

GEM Updates, Walter Trevisan

- Introduction of David Peters, new GEM Coordinator in Ames, Iowa
 - Coming from career breeding corn at Monsanto
- GEM Budget: likely will be subject to continuing resolution in 2017
- GEM Washington Visit with ASTA to be April 5, 2017

Update on US implementation of FAO International Treaty for Plant Genetic Resources for Food and Agriculture. Peter Bretting, Co-Author Vern Long (jlong@usaid.gov)

- Two primary objectives:
 - Conservation and sustainable use of Germplasm
 - Sharing the benefits from this use
- 130 nations party to the treaty. Pres. G.W. Bush signed in 2002. US Senate ratified 9/28/2016.
- Provisions:
 - Covers 64 Food and Feed Crops, including Corn and Sorghum but not soybean.
 - Under **management and control** of national governments, in the **public domain** or international research centers,
 - **Or** made available **voluntarily** by other entities (public or private)
- Benefits
 - Exchange and use of germplasm
 - Germplasm access subject to SMTA (Standard Material Transfer Agreement).
 - Public and Private-sector PGRFA owners and users would incur NO obligations
 - Now US Government can more effectively represent US interests as a treaty party
 - US users, both public and private, will have guaranteed access to PGRFA from other Parties and IARC's. Subject to SMTA.
 - Proposed terms of access to NPGS PGRFA acquired without an SMTA would not change for US users. Does not affect use of PGRFA acquired pre-Treaty or via domestic exchange.
- USAID Programs (J. Vern Long)
 - Feed the Future Programs
 - Spending \$50 million/year on Crop Improvement Programs
 - 100% International Collaborations
 - Focus countries based on hunger/poverty risk
 - Fosters familiarity with US IP protection practices. Education about requirements.
 - Develops relevant biotech products and advance regulatory system development
 - SMTAs: ongoing negotiation to improve SMTAs now that we are party to treaty. We will engage actively to streamline SMTA, especially the in-perpetuity nature of tracking.

GEM Annual Report Highlights (distributed to all participants)

Ames, Iowa (David Peters)

Raleigh, North Carolina (Matt Krakowsky)

Impact of Genotypic Selection and DH on Diversity (Tom Hoegemeyer)

- More intensive selection with genomic tools leads to loss of genetic variability in only about 5 breeding cycles or 15 years
- What can GEM do to help? Is there a need for GEM Phase 2?

Panel Discussion (T. Hoegemeyer, D. Bubeck, D. Butruille, W. Tracy, J. Edwards)

- Evidence that we've unintentionally "left behind" favorable alleles with breeding (Bubeck)
- Loss of alleles due to linkage could be a bigger problem than loss of diversity (Edwards)
- We need to think about ways to continue gains over time (Edwards)
- Long term survival is dependent on short term survival (Butruille)
- Think about *effective* population size over time. Faster cycle time can mean more recombination and diversity by making more pops in a given period AND utilizing more "smaller" lines because of incomplete information (Butruille)
- Lack of diverse breeding programs leads to less hybrid diversity (Tracy)

Questions/Discussion:

- In GEM are we simply eliminating "bad" genes or adding "good" genes?
- Could we identify "good" alleles that might be added to diverse sources rather than a few adding diverse alleles to "elite" lines?
- Do we need more recombination prior to DH induction or selection in GEM Projects?
- Is there a different way to think about heterotic groups and DH's?
- What are the companies doing to survive long-term?
 - Can't rely only on GEM/Academic Programs. We need long-term view addressing risk of genetic vulnerability using a dedicated portion of the breeding effort. There is more pressure on this portion with tight resources.
 - Need substantial breeding effort utilizing ExUS material, need to monitor genetic diversity of our programs,
- Long-term goals (diversity) and short term goals (improving mean) can coexist in a breeding program (Edwards)
- There are structural problems – very few public programs left and very few of them are publicly releasing germplasm. **Need public programs that release germplasm – royalty from commercial products but free use for breeding (Tracy). PVP-type protection.**
- Candice Gardner: cooperators needed for GEM to explore diversity using genomic tools

Election of New TSG Members

Tony Maves, Beck's Superior Hybrids

One academic representative to be determined - Dr. Jianming Yu from Iowa State University was contacted and accepted to be a member.

Allelic Diversity

GEM Allelic Diversity Project

Table 1: Total races by country

Country	Races [%]	% of Total Races [*]	Races with Acc. ^{&}	Accessions	% of Total Acc. ^{\$}
ARGENTINA	33	8.9	27	28	7.2
BOLIVIA	39	10.5	29	32	8.2
BRAZIL	34	9.2	34	34	8.7
CHILE	17	4.6	17	17	4.4
COLOMBIA	23	6.2	23	34	8.7
COSTA RICA	3	0.8	3	3	0.8
ECUADOR	34	9.2	34	38	9.8
EL SALVADOR	1	0.3	1	1	0.3
GUATEMALA	20	5.4	19	22	5.7
MEXICO	55	14.8	53	56	14.4
PANAMA	1	0.3	1	1	0.3
PARAGUAY	7	1.9	7	7	1.8
PERU	52	14.0	51	56	14.4
UNITED STATES [#]	17	4.6	17	17	4.4
URUGUAY	4	1.1	4	4	1.0
VENEZUELA	19	5.1	19	21	5.4
WEST INDIES	12	3.2	12	18	4.6
Grand Total	371	100	351	389	100

[%] Unique races for each country; some races are represented in more than one country
[*] Includes only races that are listed on spreadsheet, not all races of maize
^{&} Races to which accessions have been assigned on spreadsheet; Some accessions may not be readily available from NPGS or other collections...
^{\$} Includes only accessions that are listed on spreadsheet, not all accessions of maize
[#] All of the "races" are Native American varieties that have been studied only lightly

GEM Allelic Diversity Project

Table 2: AD Completed as of October 2017

	F ₁ with PHB47	BC ₁ with PHB47	BC ₁ F ₂ [#]	BC ₁ F ₃	BC ₁ F ₄	BC ₁ F ₅	BC ₁ F ₆	DH	F ₁ with PHZ51	BC ₁ with PHZ51	BC ₁ F ₂	BC ₁ F ₃	BC ₁ F ₄	BC ₁ F ₅	BC ₁ F ₆	DH
ARGENTINA	27 races (28 acc.)	27 races (28 acc.)	5	1					27 races (27 acc.)	27 races (27 acc.)	10					
BOLIVIA	30 races (32 acc.)	30 races (32 acc.)	1	5	5	2			30 races (33 acc.)	30 races (33 acc.)	7	6	6	1		
BRAZIL	34 races (34 acc.)	34 races (34 acc.)	10						34 races (34 acc.)	34 races (34 acc.)	10	2				
CHILE	17 races (18 acc.)	16 races (17 acc.)		1					17 races (17 acc.)	16 races (16 acc.)	1					
COLOMBIA	23 races (34 acc.)	23 races (34 acc.)	3	8	1				22 races (32 acc.)	22 races (32 acc.)	3	9		1		
COSTA RICA	3 races (3 acc.)	2 races (2 acc.)							3 races (3 acc.)	2 races (2 acc.)						
ECUADOR	33 races (37 acc.)	33 races (37 acc.)	9	6	1				33 races (37 acc.)	33 races (37 acc.)	10	7		1		
EL SALVADOR	1 races (1 acc.)	1 races (1 acc.)							1 races (1 acc.)	1 races (1 acc.)						
GUATEMALA	20 races (22 acc.)	20 races (22 acc.)	7	2				2	20 races (21 acc.)	20 races (21 acc.)	8	4				
MEXICO	51 races (55 acc.)	50 races (54 acc.)	9	7				1	50 races (54 acc.)	50 races (54 acc.)	12	8				
PANAMA	1 races (1 acc.)	1 races (1 acc.)							1 races (1 acc.)	1 races (1 acc.)						
PARAGUAY	7 races (7 acc.)	7 races (7 acc.)	3						7 races (7 acc.)	7 races (7 acc.)	4					
PERU	51 races (55 acc.)	51 races (55 acc.)	12	8	4				51 races (54 acc.)	50 races (53 acc.)	12	9	4			
UNITED STATES	17 races (17 acc.)	17 races (17 acc.)							17 races (17 acc.)	16 races (16 acc.)						
URUGUAY	4 races (4 acc.)	4 races (4 acc.)							4 races (4 acc.)	4 races (4 acc.)						
VENEZUELA	19 races (20 acc.)	19 races (20 acc.)	7	1					19 races (21 acc.)	19 races (21 acc.)	12	2				
WEST INDIES	12 races (18 acc.)	12 races (18 acc.)		1					12 races (16 acc.)	12 races (16 acc.)		1				
2017 TOTAL	350 races (386 acc.)	348 races (382 acc.)							348 races (380 acc.)	345 races (373 acc.)						
<i>2016 TOTAL</i>	<i>348 races (382 acc.)</i>	<i>346 races (380 acc.)</i>							<i>343 races (374 acc.)</i>	<i>342 races (357 acc.)</i>						
<i>2015 TOTAL</i>	<i>344 races (377 acc.)</i>	<i>341 races (374 acc.)</i>							<i>321 races (349 acc.)</i>	<i>288 races (311 acc.)</i>						

Table 3. DH1 Lines Advanced to DH2

Entry	Pedigree	Lines
1	(Amargo-ARZM 03 014/PHZ51)/PHZ51	14
2	(Amarillo salvadoreño-CIMMYT Comp./PHZ51)/PHZ51	10
3	(Araguito-VEN 568/PHZ51)/PHZ51	8
4	(Camelia-CHZM 04 011/PHZ51)/PHZ51	21
5	(Canario de formosa-ARZM 06 016/PHZ51)/PHZ51	6
6	(Conejo-GRO_157/PHZ51)/PHZ51	12
7	(Cuban_Flint-CUB_63/PHZ51)/PHZ51	15
8	(Nal-tel BTB-GUA 145/PHZ51)/PHZ51	8
9	(Nal-tel_ATB-GUA_111/PHZ51)/PHZ51	26
10	(Nal-Tel-CAM 48/PHZ51)/PHZ51	31
11	(PHB47/(PHB47/Cuzco Ecuatoriano-ECU 530)	1
12	(PHB47/(PHB47/Paru-BOV)	1
13	(PHB47/Sabanero Ecuatoriano-ECU 433)/PHB47	6
14	(PHZ51/(PHZ51/Cuzco Ecuatoriano-ECU 530)	1
15	(PHZ51/(PHZ51/Nal-tel de ocho-GUA 458)	12
16	(PHZ51/(PHZ51/Pira-CUN 327)	11
17	(PHZ51/(PHZ51/Quicheno late-GUA 863)	2
18	(PHZ51/(PHZ51/Zamorano Amarillo-MIC 66)	8
19	(PHZ51/Aleman-HCO 38)/PHZ51	14
20	(PHZ51/Amarillo de Malleco-CHZM 09 002)/PHZ51	11
21	(PHZ51/Arrocillo_Amarillo-VER_311)/PHZ51	8
22	(PHZ51/Avati moroti-PAG 136)/PHZ51	6
23	(PHZ51/Avati Tupi-PAG 129)/PHZ51	4
24	(PHZ51/Brazil-1694 (USDA))/PHZ51	17
25	(PHZ51/Cateto-BAI I)/PHZ51	13
26	(PHZ51/Coastal Tropical Flint-BVIR 104)/PHZ51	9
27	(PHZ51/Coscomatepec-VER 110)/PHZ51	13
28	(PHZ51/Cristal_de_Chihuahua-CHH_128)/PHZ51	17
29	(PHZ51/Cubano Amarillo-BVIR 102)/PHZ51	9
30	(PHZ51/Dulce-ARZM 20 005)/PHZ51	26
31	(PHZ51/Sabanero-VEN_514)/PHZ51	2
32	(PHZ51/Tuson-BAI III)/PHZ51	18
33	(PHZ51/Tuson-CUB 67)/PHZ51	9
34	(PHZ51/Tuxpeño-BVIR_153)/PHZ51	11
35	(PHZ51/Zapalote Chico-OAX 50)/PHZ51	6
36	(Tuxpeño-ECU 942/PHZ51)/PHZ51	12

Breeding Cross Observation

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB2	CML78:S(LH193) ^{&}	68	1413	68	1399	95	258	6	5	Foliar disease, might work in Midwest
OB2	CML78:S(LH195)	70	1469	71	1496	110	275	5	5	Ear height, foliar disease
OB2	CML78:S(LH204)	68	1413	68	1399	110	270	5	5	Stalk rot
OB2	Pioneer 1745R	68	1413	68	1413	100	263	1		
OB2	CML78:S(PHEW7)	67	1370	66	1356	95	263	6	5	Early
OB2	CML78:S(PHHB4)	70	1451	69	1425	105	280	5	5	Ear height
OB2	CML78:S(PHMK0)	70	1451	69	1438	125	290	4	5	Very high ears
OB2	CML78:S(PHP38)	68	1414	68	1400	105	265	3	3	Best CML78 combination
OB2	CML78:S(PHT11)	68	1400	68	1400	113	300	5	5	Ear height, foliar disease
OB2	CML78:S(PHW52)	70	1454	69	1428	104	263	4	3	Foliar disease, stalk rot
OB2	CML178:S(LH193)	68	1413	67	1384	118	265	3	4	
OB2	CML178:S(LH195)	71	1496	71	1496	128	268	3	4	Cross again to bring down ear height
OB2	CML178:S(LH204)	69	1428	68	1399	118	255	1	4	Cross again to bring down ear height
OB2	CML178:S(NK_H8431)	65	1328	64	1300	115	255	2	4	Cross again to bring down ear height
OB2	CML178:S(PHEW7)	66	1341	66	1341	118	270	2	5	
OB2	CML178:S(PHHB4)	70	1454	68	1399	113	290	2	4	Cross again to bring down ear height
OB2	CML178:S(PHMK0)	70	1451	69	1423	138	290	2	4	Cross again to bring down ear height
OB2	CML178:S(PHP38)	68	1413	67	1384	128	290	1	4	Cross again to bring down ear height
OB2	CML178:S(PHT11)	67	1385	67	1370	123	293	4	5	
OB2	CML178:S(PHW52)	69	1443	68	1413	123	275	2	4	Cross again to bring down ear height
OB2	Pioneer 1498	65	1314	64	1300	115	278	1		
OB2	CML287:S(LH197)	74	1561	73	1538	153	323	3	4	Cross again to bring down ear height
OB2	CML287:S(LH204)	72	1521	73	1534	148	310	2	4	Cross again to bring down ear height
OB2	CML287:S(NK_H8431)	68	1413	68	1413	140	323	1	4	Cross again to bring down ear height
OB2	CML287:S(PHEW7)	71	1492	71	1479	133	305	3	4	Cross again to bring down ear height
OB2	CML287:S(PHP38)	73	1548	73	1548	130	310	1	4	Cross again to bring down ear height
OB2	CML287:S(PHT11)	70	1458	70	1469	153	335	2	5	
OB2	CML287:S(PHW52)	73	1534	73	1548	143	315	1	4	Cross again to bring down ear height
OB2	CML339:S(LH195)	76	1617	77	1638	135	310	2	4	Cross again to bring down ear height
OB2	CML339:S(LH197)	73	1549	73	1549	133	303	2	4	Cross again to bring down ear height
OB2	CML340:S(LH195)	74	1574	75	1587	135	308	2	4	Cross again to bring down ear height
OB2	CML375:S(PHP38)	69	1438	69	1438	108	255	1	2	
OB2	CML375:S(LH193)	69	1438	69	1438	108	265	2	2	
OB2	CML375:S(LH195)	71	1496	72	1521	115	263	3	5	Ear height
OB2	CML375:S(LH204)	68	1414	68	1414	118	260	2	3	
OB2	CML375:S(PHEW7)	69	1443	69	1428	110	263	2	5	
OB2	CML375:S(PHHB4)	71	1492	71	1482	113	265	2	2	
OB2	CML375:S(PHMK0)	73	1534	72	1521	115	273	1	5	Ear height

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB2	CML375:S(PHT11)	69	1428	68	1413	120	275	2	5	Ear height
OB2	CML375:S(PHW52)	71	1482	71	1481	118	273	1	2	
OB2	KS23-6:S(PHP38)	71	1479	70	1469	125	285	1	4	Cross again to bring down ear height
OB2	KS23-6:S(LH193)	71	1496	72	1511	118	280	2	4	Cross again to bring down ear height
OB2	KS23-6:S(LH195)	73	1536	73	1536	118	278	1	4	Cross again to bring down ear height
OB2	KS23-6:S(LH204)	70	1454	70	1467	133	293	1	4	Cross again to bring down ear height
OB2	KS23-6:S(PHHB4)	72	1506	71	1496	118	295	1	4	Cross again to bring down ear height
OB2	KS23-6:S(PHMK0)	72	1506	71	1496	128	300	1	4	Cross again to bring down ear height
OB2	KS23-6:S(PHT11)	68	1413	68	1413	130	285	2	5	
OB2	KS23-6:S(PHW52)	71	1482	71	1482	115	288	1	4	Cross again to bring down ear height
OB2	NC320:S(PHP38)	72	1505	71	1492	113	288	3	5	
OB2	NC320:S(LH193)	71	1482	71	1496	110	260	6	5	
OB2	NC320:S(LH195)	72	1521	72	1521	103	270	5	5	
OB2	NC320:S(LH204)	70	1469	69	1428	113	268	4	5	
OB2	NC320:S(PHEW7)	71	1482	70	1454	108	271	5	5	
OB2	NC320:S(PHHB4)	74	1562	73	1536	105	290	4	5	
OB2	NC320:S(PHMK0)	74	1562	72	1521	123	293	3	5	
OB2	NC320:S(PHT11)	71	1479	70	1469	128	290	5	5	
OB2	NC320:S(PHW52)	72	1519	71	1492	113	283	5	3	Best NC320 combination for ear height
OB3	89343:N(DK_HBA1)	73	1534	73	1534	133	310	1	4	Ear height
OB3	89343:N(LH82)	68	1399	66	1356	118	260	2	4	Poor plant health
OB3	89343:N(LH185)	69	1443	68	1413	108	275	1	3	
OB3	89343:N(LH212Ht)	71	1479	71	1482	125	310	1	4	Stalk rot
OB3	89343:N(LH213)	71	1492	70	1458	125	308	1	4	
OB3	AC454:N(DK_HBA1)	70	1469	70	1469	120	290	2	4	Small ears
OB3	AC454:N(LH82)	66	1356	66	1356	100	253	5	4	Poor stay green
OB3	AC454:N(LH185)	68	1398	67	1370	110	268	1	3	
OB3	AC454:N(LH212Ht)	68	1413	68	1413	115	280	2	5	Stalk rot
OB3	AC454:N(LH213)	69	1443	68	1413	113	293	2	2	Best of AC454
OB3	CML312:N(DK_HBA1)	76	1624	76	1613	138	330	1	4	Cross again to bring down ear height
OB3	CML312:N(LH82)	70	1469	69	1428	110	258	3	3	
OB3	CML312:N(LH185)	70	1454	68	1413	108	285	1	4	Cross again, decent but LH185 has issues
OB3	CML312:N(LH212Ht)	71	1492	71	1482	130	320	1	4	Cross again to bring down ear height
OB3	CML312:N(LH213)	70	1469	69	1428	123	315	1	4	Cross again to bring down ear height
OB3	CML422:N(LH185)	65	1314	64	1286	73	250	1	4	Too early
OB3	CML424:N(DK_HBA1)	68	1400	67	1385	128	278	1	4	Early
OB3	CML424:N(LH210)	67	1385	66	1342	130	280	2	5	Ear height

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB3	CML425:N(DK_HBA1)	70	1467	69	1438	135	293	1	4	Cross again to bring down ear height
OB3	CML425:N(LH185)	67	1370	66	1341	105	260	1	2	
OB3	CML430:N(LH185)	69	1428	69	1428	105	253	1	3	
OB3	CML430:N(PHKE6)	69	1428	69	1428	123	273	1	5	
OB3	CML430:N(PHN73)	68	1398	68	1398	105	270	1	3	
OB3	CML449:N(DK_HBA1)	74	1562	73	1534	125	293	1	4	Cross again to bring down ear height
OB3	CML449:N(LH82)	68	1413	67	1384	98	248	2	3	
OB3	CML449:N(LH185)	69	1428	68	1413	115	263	1	2	
OB3	CML449:N(LH212Ht)	71	1482	71	1496	135	290	1	4	Cross again to bring down ear height
OB3	CML449:N(LH213)	71	1479	70	1458	133	303	1	4	Cross again to bring down ear height
OB3	CML449:N(NC290)	70	1458	69	1428	130	283	1	4	Cross again to bring down ear height
OB3	CML449:N(PHG47)	68	1413	68	1399	113	278	2	3	
OB3	CML449:N(PHN37)	67	1384	66	1342	114	283	1	3	
OB3	CML449:N(PHN73)	68	1413	68	1413	115	275	1	3	
OB3	CML449:N(PHW65)	71	1492	70	1469	118	283	2	4	Cross again to bring down ear height
OB3	F4:N(LH82)	68	1413	68	1399	118	260	4	5	Too early, ear height
OB3	F4:N(LH185)	70	1454	69	1428	120	280	2	4	Cross again to bring down ear height
OB3	F4:N(LH212Ht)	70	1469	69	1443	143	305	2	5	Ear height
OB3	F4:N(LH213)	71	1479	70	1469	125	300	2	4	Cross again to bring down ear height
OB3	F45:N(LH82)	65	1328	64	1300	80	253	2	4	Too early
OB3	F45:N(DK_HBA1)	71	1481	71	1480	103	280	1	2	Best of F45 combinations
OB3	F45:N(LH185)	67	1384	66	1356	93	278	1	2	
OB3	F45:N(LH212Ht)	68	1398	67	1370	95	283	1	5	
OB3	F45:N(LH213)	69	1428	68	1398	88	295	1	2	
OB3	F45:N(NC290)	68	1398	66	1342	80	273	1	2	
OB3	F47:N(DK_HBA1)	72	1519	73	1534	130	285	1	4	Cross again to bring down ear height
OB3	F47:N(LH82)	69	1438	69	1428	100	238	1	2	
OB3	F47:N(LH185)	69	1438	69	1438	108	248	1	2	
OB3	F47:N(LH212Ht)	70	1469	71	1482	123	285	1	5	Stalk rot
OB3	F47:N(LH213)	71	1482	70	1454	118	283	1	4	Cross again to bring down ear height
OB3	F47:N(NC290)	71	1479	70	1469	118	280	1	4	Cross again to bring down ear height
OB3	Hi53:N(LH82)	67	1371	65	1328	105	253	3	5	Stalk rot
OB3	Hi53:N(DK_HBA1)	70	1467	70	1451	123	293	1	5	Stalk rot
OB3	Hi53:N(LH185)	69	1438	68	1400	113	273	1	5	Stalk rot
OB3	Hi53:N(LH212Ht)	69	1428	68	1398	133	278	2	5	Ear height
OB3	Hi53:N(LH213)	69	1443	67	1370	120	293	3	5	
OB3	FL_4BT7:N(LH82)	69	1428	68	1413	105	248	2	3	
OB3	FL_4BT7:N(DK_HBA1)	71	1496	71	1481	118	288	1	4	Cross again to bring down ear height
OB3	FL_4BT7:N(LH185)	69	1438	69	1428	108	258	1	2	

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB3	FL 4BT7:N(LH212Ht)	70	1454	69	1443	118	278	1	5	
OB3	FL 4BT7:N(LH213)	70	1454	69	1438	118	278	1	3	Stalk rot
OB3	Ki43:N(NK787)	72	1505	71	1492	115	293	1	5	
OB4	GEMN-0104/GEMN-0238	69	1428	69	1428	108	273	2	3	Variable ear height
OB4	GEMN-0270/GEMN-0104	73	1549	72	1521	118	293	1	4	Cross again to bring down ear height
OB4	GEMN-0271/GEMN-0104	73	1549	73	1536	123	298	2	5	Ear height
OB4	GEMN-0272/GEMN-0104	71	1479	72	1506	105	288	1	2	
OB4	GEMN-0232/GEMN-0238	69	1438	69	1438	128	280	2	5	Small, high ears
OB4	GEMN-0270/GEMN-0048	70	1454	69	1438	103	278	1	2	
OB4	GEMN-0270/GEMN-0238	70	1469	70	1454	125	280	2	5	Ear height, stalk rot
OB4	GEMN-0271/GEMN-0048	71	1496	71	1481	125	283	2	5	Ear height
OB4	GEMN-0271/GEMN-0238	70	1469	69	1428	120	285	2	5	
OB4	GEMN-0272/GEMN-0287	69	1428	68	1413	110	298	1	1	
OB4	(GEMN-108/GEMN-178)-B-1/GEMN-48	70	1454	69	1443	115	288	1	5	
OB4	GEMS-0235/GEMS-0032	70	1469	70	1454	113	268	4	5	
OB4	GEMS-0237/GEMS-0032	71	1482	70	1454	115	275	4	5	
OB4	GEMS-0255/GEMS-0032	73	1533	72	1506	140	303	1	4	Cross again to bring down ear height
OB4	GEMS-0113/GEMS-0215	69	1443	69	1428	125	288	2	3	
OB4	GEMS-0215/GEMS-0235	70	1469	69	1443	115	275	2	5	Poor plant health
OB4	GEMS-0243/GEMS-0113	70	1469	69	1443	120	290	6	5	Stalk rot
OB4	GEMS-0243/GEMS-0227	68	1398	68	1398	105	288	5	3	Stalk rot
OB4	GEMS-0243/GEMS-0235	71	1482	70	1467	115	288	5	5	Poor plant health
OB4	GEMS-0237/GEMS-0243	70	1469	69	1438	128	303	6	5	Poor plant health
OB4	GEMS-0243/GEMS-0255	74	1575	74	1562	135	313	2	4	Cross again to bring down ear height
OB4	GEMS-0243/GEMS-0256	73	1549	72	1506	113	303	3	2	
OB4	GEMS-0258/GEMS-0255	72	1511	71	1496	128	303	2	5	Poor plant health, ear height
OB4	CML343:S(NK_H8431)GEMS-243	73	1549	73	1538	125	313	3	5	Poor plant health, stalk rot, ear height
OB4	CML343:S(GEMS-32)GEMS-113	74	1575	74	1575	120	310	2	3	Stalk rot
OB4	CML343:S(GEMS-32)GEMS-227	71	1482	71	1482	113	303	3	2	Stalk rot
OB4	CML343:S(GEMS-32)GEMS-235	73	1534	72	1506	130	300	3	5	
OB4	CML494:S(GEMS-32)GEMS-113	72	1506	71	1496	135	298	3	5	
OB4	CML494:S(GEMS-32)GEMS-227	71	1481	71	1481	133	303	3	5	Ear height
OB4	(CML343/NC320):S(GEMS-255)	74	1575	73	1549	145	313	1	5	Ear height
OB4	(CML343/NC320):S(GEMS-235)	73	1534	71	1496	140	298	3	5	
OB4	(CML343/NC320):S(GEMS-237)	74	1562	72	1525	130	298	3	5	
OB4	(CML373/NC320):S(GEMS-227)	69	1428	68	1413	108	283	4	5	Poor plant health
OB4	(CML373/NC320):S(GEMS-255)	73	1534	72	1521	145	318	1	4	Cross again to bring down ear height
OB5	H5:S(PHP38)	71	1492	70	1454	143	323	1	4	Cross again to bring down ear height

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB5	HB 83:S(PHP38)	72	1519	70	1469	128	303	1	4	Cross again to bring down ear height
OB5	ICA H-154:S(PHP38)	71	1482	69	1438	123	270	2	4	Cross again to bring down ear height
OB5	ICA H-260:S(PHP38)	73	1548	73	1534	138	305	2	4	Cross again to bring down ear height
OB5	ICA V-156:S(PHP38)	73	1534	72	1511	130	295	1	4	Cross again to bring down ear height
OB5	Celaya+Tabloncillo-SLP44:S(PHP38)	72	1505	70	1467	135	320	2	5	
OB5	Celaya-DGO32:S(PHP38)	72	1506	70	1454	163	325	3	4	Cross again to bring down ear height
OB5	Celaya-GTO36:S(PHP38)	72	1521	71	1496	143	305	3	4	Cross again to bring down ear height, improve plant health
OB5	Bolita-DGO159:S(PHP38)	65	1314	63	1259	115	270	4	5	Too early
OB5	Celaya-GTO69:S(PHP38)	69	1438	68	1413	115	290	4	4	Cross again to bring down ear height
OB5	Celaya-GTO84:S(PHP38)	73	1533	70	1454	153	323	3	4	Cross again to bring down ear height
OB5	Celaya-GTO88:S(PHP38)	71	1481	69	1428	135	300	4	5	Stalk rot, ear height
OB5	Celaya-JAL167B:S(PHP38)	72	1511	69	1425	138	310	2	4	Cross again to bring down ear height
OB5	Celaya-MOR162:S(PHP38)	73	1549	70	1465	150	318	2	5	
OB5	Celaya-NAY289:S(PHP38)	73	1533	71	1482	155	308	2	4	Cross again to bring down ear height
OB5	Tuxpeno-SLP146:S(PHP38)	75	1605	74	1563	155	320	2	4	Cross again to bring down ear height
OB5	Tuxpeno 1-BR31381:S(PHP38)	72	1519	71	1479	130	295	1	4	Cross again to bring down ear height
OB5	Coastal Tropical Flint-Barbados GP2:S(PHP38)	74	1577	73	1533	150	320	1	5	
OB5	H5:N(LH82)	69	1443	69	1428	135	290	2	4	Cross again to bring down ear height
OB5	HB 83:N(LH82)	71	1479	69	1428	118	273	2	2	
OB5	ICA H-154:N(LH82)	69	1443	69	1428	115	270	3	5	
OB5	ICA H-260:N(LH82)	71	1479	70	1458	138	300	4	4	Cross again to bring down ear height
OB5	ICA V-106:N(LH82)	69	1438	68	1400	140	290	3	4	Cross again to bring down ear height
OB5	ICA V-206:N(LH82)	70	1454	68	1414	118	263	2	4	Cross again to bring down ear height
OB5	Coastal Tropical Flint-Barbados GP2:N(LH82)	73	1548	73	1533	140	313	3	4	Cross again to bring down ear height
OB5	GEMN-0048/HB 83	75	1605	74	1562	140	318	1	3	
OB5	HB 83/GEMN-0097	71	1492	71	1479	120	298	2	3	Stalk rot
OB6	KO679Y/CML287:S(LH193)	71	1492	71	1479	133	298	3	3	
OB6	KO679Y/CML287:S(LH195)	73	1534	73	1533	118	268	2	4	Cross again to bring down ear height
OB6	KO679Y/CML287:S(LH204)	71	1479	70	1454	115	275	2	4	Cross again to bring down ear height
OB6	KO679Y/CML287:S(PHEW7)	70	1458	69	1428	118	285	3	4	Cross again to bring down ear height
OB6	KO679Y/CML287:S(PHHB4)	73	1534	72	1506	123	288	3	5	
OB6	KO679Y/CML287:S(PHMK0)	72	1519	72	1519	120	288	2	4	Cross again to bring down ear height
OB6	KO679Y/CML287:S(PHP38)	72	1519	72	1506	138	298	1	4	
OB6	KO679Y/CML287:S(PHT11)	70	1458	70	1458	121	288	2	4	Cross again to bring down ear height
OB6	KO679Y/CML287:S(PHW52)	72	1505	72	1505	128	305	2	2	
OB6	CML343/KO679Y:S(LH193)	71	1492	71	1479	113	285	3	3	
OB6	CML343/KO679Y:S(LH204)	71	1479	69	1438	123	288	2	5	Ear height
OB6	CML343/KO679Y:S(PHHB4)	73	1548	72	1506	100	285	2	3	

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB6	CML343/KO679Y:S(PHMK0)	72	1505	71	1479	120	288	1	3	Stalk rot
OB6	CML343/KO679Y:S(PHP38)	71	1479	70	1458	118	290	1	5	
OB6	CML343/KO679Y:S(PHT11)	70	1469	70	1469	133	298	2	5	
OB6	CML423/CML343:S(LH193)	69	1443	68	1399	108	260	1	3	
OB6	CML423/CML343:S(LH195)	70	1467	70	1467	123	283	1	5	
OB6	CML423/CML343:S(LH204)	69	1428	67	1371	120	280	2	5	Stalk rot
OB6	CML423/CML343:S(PHEW7)	67	1370	66	1356	93	280	2	2	
OB6	CML423/CML343:S(PHHB4)	71	1482	69	1428	98	288	1	3	
OB6	CML423/CML343:S(PHMK0)	73	1548	71	1479	130	300	1	5	Stalk rot
OB6	CML423/CML343:S(PHP38)	69	1443	68	1414	113	280	1	3	
OB6	CML423/CML343:S(PHT11)	69	1428	69	1428	118	288	1	5	
OB6	CML423/CML343:S(PHW52)	70	1469	69	1443	105	268	1	2	
OB6	89291/CML373:S(LH193)	69	1443	68	1413	120	283	3	3	
OB6	89291/CML373:S(LH195)	72	1505	71	1492	138	285	2	4	Cross again to bring down ear height
OB6	89291/CML373:S(LH204)	69	1443	67	1384	118	283	1	4	Stalk rot
OB6	89291/CML373:S(PHEW7)	68	1413	68	1398	113	273	2	2	
OB6	89291/CML373:S(PHHB4)	71	1479	70	1458	105	278	2	3	
OB6	89291/CML373:S(PHMK0)	72	1505	70	1458	130	290	1	4	
OB6	89291/CML373:S(PHP38)	68	1413	68	1399	118	280	1	4	
OB6	89291/CML373:S(PHT11)	68	1413	68	1398	130	288	2	4	Cross again to bring down ear height
OB6	89291/CML373:S(PHW52)	70	1458	69	1428	98	273	1	5	Stalk rot
OB6	CML287/CML373:S(LH195)	74	1563	74	1563	120	273	2	4	Cross again to bring down ear height
OB6	CML287/CML373:S(LH204)	70	1469	70	1458	143	293	2	4	Cross again to bring down ear height
OB6	CML287/CML373:S(PHHB4)	73	1548	73	1533	118	313	2	4	Cross again to bring down ear height
OB6	CML287/CML373:S(PHT11)	71	1479	71	1479	145	303	3	5	
OB6	CML287/CML373:S(PHW52)	72	1505	71	1492	115	290	1	4	
OB6	Mp715/CML373:S(LH193)	71	1492	72	1505	130	288	4	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(LH195)	73	1548	74	1563	125	298	3	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(LH204)	71	1482	70	1469	135	283	2	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(PHEW7)	71	1492	69	1443	108	288	3	3	
OB6	Mp715/CML373:S(PHHB4)	75	1591	74	1578	125	308	2	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(PHMK0)	73	1533	72	1506	128	310	1	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(PHP38)	73	1548	72	1506	135	290	2	4	Cross again to bring down ear height
OB6	Mp715/CML373:S(PHT11)	73	1533	72	1519	150	308	3	5	
OB6	Mp715/CML373:S(PHW52)	74	1563	73	1548	138	288	3	4	Cross again to bring down ear height
OB6	CML373/Q6199:S(LH193)	73	1534	72	1519	115	280	2	5	Stalk rot
OB6	CML373/Q6199:S(LH195)	74	1578	74	1578	133	290	2	4	Cross again to bring down ear height
OB6	CML373/Q6199:S(LH204)	72	1519	71	1496	145	293	2	4	Cross again to bring down ear height
OB6	CML373/Q6199:S(PHEW7)	72	1519	72	1519	125	300	2	4	Cross again to bring down ear height

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB6	CML373/Q6199:S(PHHB4)	76	1617	75	1591	120	305	2	4	
OB6	CML373/Q6199:S(PHMK0)	76	1628	74	1563	140	323	1	4	Cross again to bring down ear height
OB6	CML373/Q6199:S(PHP38)	72	1506	71	1479	118	270	1	4	Cross again to bring down ear height
OB6	CML373/Q6199:S(PHT11)	72	1519	72	1519	123	295	2	5	
OB6	CML373/Q6199:S(PHW52)	74	1563	73	1533	128	293	2	4	Cross again to bring down ear height
OB7	CML287:S(GEMS-220)LH193	69	1443	69	1443	108	273	5	5	Poor plant health
OB7	CML287:S(GEMS-220)LH195	72	1506	71	1496	105	273	3	3	
OB7	CML287:S(GEMS-220)LH204	70	1458	69	1428	128	280	3	5	Stalk rot
OB7	CML287:S(GEMS-220)PHEW7	68	1398	68	1398	113	283	3	3	
OB7	CML287:S(GEMS-220)PHHB4	72	1505	71	1479	108	288	3	3	
OB7	CML287:S(GEMS-220)PHMK0	71	1479	70	1458	135	305	1	3	
OB7	CML287:S(GEMS-220)PHP38	69	1443	69	1428	118	288	2	5	
OB7	CML287:S(GEMS-220)PHT11	68	1413	68	1413	113	288	3	5	
OB7	CML287:S(GEMS-227)LH193	69	1428	69	1428	93	283	5	3	
OB7	CML287:S(GEMS-227)LH204	68	1413	68	1399	115	285	2	3	
OB7	CML287:S(GEMS-227)PHEW7	67	1370	67	1370	108	288	3	5	Stalk rot
OB7	CML287:S(GEMS-227)PHHB4	70	1469	70	1454	110	295	3	2	
OB7	CML287:S(GEMS-227)PHMK0	69	1443	69	1443	133	305	2	3	Ear height
OB7	CML287:S(GEMS-227)PHP38	69	1428	68	1399	110	305	2	2	
OB7	CML287:S(GEMS-227)PHT11	68	1398	68	1398	120	300	3	5	
OB7	CML287:S(GEMS-227)PHW52	70	1458	69	1428	98	278	3	2	Stalk rot
OB7	CML494:S(GEMS-220)LH193	71	1479	69	1443	93	265	5	5	Poor plant health
OB7	CML494:S(GEMS-220)LH195	73	1534	72	1506	113	265	3	3	Small ears
OB7	CML494:S(GEMS-220)LH204	69	1443	68	1414	125	280	3	5	Stalk rot
OB7	CML494:S(GEMS-220)PHEW7	68	1398	67	1384	100	273	3	3	Plant health
OB7	CML494:S(GEMS-220)PHHB4	72	1505	71	1482	128	303	3	5	
OB7	CML494:S(GEMS-220)PHMK0	70	1469	70	1458	128	293	2	5	Ear height
OB7	CML494:S(GEMS-220)PHP38	70	1469	69	1428	98	268	2	3	Plant health
OB7	CML494:S(GEMS-220)PHT11	69	1443	69	1428	120	275	3	5	
OB7	CML494:S(GEMS-220)PHW52	71	1482	70	1458	95	263	3	2	Stalk rot
OB7	CML494:S(GEMS-227)LH193	69	1443	69	1428	100	265	5	5	Poor plant health
OB7	CML494:S(GEMS-227)LH195	71	1479	71	1479	113	278	4	3	
OB7	CML494:S(GEMS-227)LH204	68	1413	67	1384	125	288	3	5	Stalk rot
OB7	CML494:S(GEMS-227)PHEW7	68	1398	67	1384	100	273	3	3	
OB7	CML494:S(GEMS-227)PHHB4	70	1469	70	1454	100	278	3	5	
OB7	CML494:S(GEMS-227)PHMK0	70	1469	70	1469	128	313	3	3	Ear height
OB7	CML494:S(GEMS-227)PHP38	69	1428	68	1414	108	275	2	2	
OB7	CML494:S(GEMS-227)PHT11	68	1413	67	1384	123	293	4	5	
OB7	CML494:S(GEMS-227)PHW52	69	1428	68	1413	108	275	4	2	

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB7	GEMS-0032:S(LH193)	71	1482	70	1454	118	278	2	2	
OB7	GEMS-0032:S(PHMK0)	72	1519	71	1496	123	290	2	5	Ear height
OB7	GEMS-0243:S(LH193)	71	1482	71	1482	105	275	5	5	Poor plant health
OB7	GEMS-0243:S(PHEW7)	68	1413	68	1413	93	293	5	5	Poor plant health
OB7	GEMS-0243:S(PHMK0)	71	1479	70	1458	128	318	2	5	Ear height
OB7	GEMS-0243:S(PHP38)	69	1428	68	1413	108	280	1	2	
OB7	GEMS-0243:S(PHT11)	71	1479	70	1454	98	275	5	3	
OB7	GEMS-0243:S(PHW52)	71	1492	71	1479	93	280	4	3	Poor plant health
OB8	CML287:S(LH204)LH193	70	1454	70	1458	108	273	3	3	Plant health
OB8	CML287:S(LH204)LH204	70	1469	70	1454	88	258	3	5	
OB8	CML287:S(LH204)PHEW7	67	1384	67	1370	98	263	3	5	
OB8	CML287:S(LH204)PHHB4	71	1492	70	1469	110	283	2	3	
OB8	CML287:S(LH204)PHMK0	70	1469	69	1443	113	290	2	5	
OB8	CML287:S(LH204)PHT11	68	1398	68	1398	108	278	3	5	
OB8	CML287:S(LH204)PHW52	70	1452	69	1428	100	268	2	5	Poor plant health
OB8	CML312:S(LH204)LH193	70	1469	69	1443	108	260	4	3	
OB8	LH195/LH212Ht	69	1428	69	1428	90	263	2		
OB8	Pioneer 3394	69	1443	69	1428	95	250	4		
OB8	CML312:S(LH204)PHEW7	67	1384	66	1356	98	260	3	5	
OB8	CML312:S(LH204)PHHB4	70	1454	68	1413	105	275	3	5	
OB8	CML312:S(LH204)PHMK0	70	1458	68	1413	110	300	2	5	Stalk rot
OB8	CML312:S(LH204)PHP38	68	1398	67	1370	108	268	2	2	
OB8	CML312:S(LH204)PHT11	68	1413	68	1398	123	295	4	5	
OB8	CML312:S(LH204)PHW52	69	1428	68	1398	90	263	2	3	
OB8	CML494:S(PHP38)LH193	69	1438	69	1428	100	255	4	2	
OB8	CML494:S(PHP38)LH204	69	1428	67	1384	115	268	2		
OB8	CML494:S(PHP38)PHEW7	68	1414	67	1385	93	258	2	3	
OB8	CML494:S(PHP38)PHHB4	70	1467	70	1454	93	265	2	2	
OB8	CML494:S(PHP38)PHMK0	70	1469	69	1443	105	295	1	3	Ear height
OB8	CML494:S(PHP38)PHP38	70	1458	69	1428	93	268	1	2	
OB8	CML494:S(PHP38)PHT11	68	1399	67	1384	113	293	3	3	
OB8	CML494:S(PHP38)PHW52	69	1428	68	1413	108	263	2	3	Plant health
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(LH193)	69	1438	68	1414	103	263	4	5	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(LH195)	71	1496	71	1481	118	255	5	5	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(LH204)	69	1428	68	1399	113	255	4	5	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(PHEW7)	67	1384	66	1356	100	265	3	3	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(PHHB4)	70	1469	69	1428	105	275	4	5	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(PHMK0)	69	1428	68	1413	120	300	3	5	
OB8	La Posta Sequia C7 F64-1-1-1-B*3:S40a(PHP38)	68	1398	67	1369	123	275	2	3	

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40a(PHT11)	68	1399	67	1385	115	278	3	3	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40a(PHW52)	68	1413	68	1413	103	258	3	2	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(LH193)	71	1482	70	1467	93	263	4	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(LH195)	71	1479	70	1469	110	263	4	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(LH204)	69	1428	68	1399	98	240	3	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(PHEW7)	67	1384	66	1356	95	260	3	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(PHMK0)	70	1454	68	1414	115	290	1	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(PHP38)	68	1413	67	1384	98	265	2	3	Stalk rot
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(PHT11)	68	1413	68	1399	113	270	3	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S40b(PHW52)	70	1454	69	1428	103	265	3	2	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)LH193	69	1428	67	1384	78	248	6	5	Poor plant health
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)LH195	71	1479	70	1469	105	250	4	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)LH204	68	1399	67	1371	108	255	3	3	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHEW7	68	1399	67	1370	90	265	4	2	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHHB4	70	1469	68	1413	100	295	2	3	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHMK0	68	1413	67	1384	110	300	2	5	Ear height
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHP38	68	1398	67	1370	103	275	3	2	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHT11	68	1413	67	1384	113	275	4	5	
OB8	La Posta Sequia_C7_F64-1-1-1-1-B*3:S(LH197)PHW52	68	1398	67	1384	100	280	3	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(LH193)	69	1428	68	1413	90	258	4	2.5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(LH195)	71	1496	71	1496	115	260	4	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(LH204)	67	1384	66	1356	98	255	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHEW7)	67	1370	66	1341	93	258	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHHB4)	70	1454	69	1428	103	298	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHMK0)	69	1428	68	1413	118	303	1	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHP38)	69	1428	68	1399	110	275	2	5	Ear height
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHT11)	67	1384	66	1356	108	285	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40a(PHW52)	69	1443	68	1413	100	258	2	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(LH193)	69	1443	68	1413	93	250	4	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(LH195)	72	1506	71	1496	103	255	2	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(LH204)	68	1398	67	1370	95	240	2	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHEW7)	66	1356	66	1342	90	268	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHHB4)	70	1454	69	1428	110	283	1	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHMK0)	68	1413	67	1384	113	288	1	5	Poor plant health
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHP38)	68	1413	67	1384	100	265	1	5	Stalk rot
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHT11)	69	1428	68	1413	113	273	2	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S40b(PHW52)	69	1428	68	1398	95	253	2	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)LH193	68	1413	68	1398	113	263	3	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)LH195	70	1469	70	1469	110	270	2	3	

GEM-Raleigh Breeding Cross Observations, Clayton, NC 2017

EXP	Pedigree	Silking		Anthesis		EH	PH	Disease	Aspect	Notes
		Days	GDU	Days	GDU	cm	cm	1-9, 1=best	1-5*, 1=best	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)LH204	67	1384	66	1356	95	260	1	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHEW7	67	1370	67	1370	93	260	2	2	Midwest?
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHHB4	72	1505	71	1479	85	270	2	2	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHMK0	71	1482	69	1439	98	278	1	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHP38	69	1428	68	1413	85	255	1	3	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHT11	68	1398	67	1384	103	275	3	5	
OB8	La Posta Sequia_C7_F71-1-1-1-2-B*3:S(PHP38)PHW52	70	1454	69	1428	98	258	1	2	
OB8	CML449:N(PHN37)DK_HBA1	66	1356	66	1356	98	275	1	3	
OB8	CML449:N(PHN37)LH212Ht	67	1370	66	1356	108	278	2	5	
OB8	CML449:N(PHN37)LH213	69	1428	67	1370	105	290	2	5	
OB8	CML449:N(PHN37)NC290	66	1342	64	1300	108	273	1	3	
OB8	CML449:N(HBA1.PHN37)	68	1413	68	1398	120	280	1	3	
OB8	CML449:N(HBA1.PHN73)	70	1469	70	1454	113	280	2	5	
OB8	CML449:N(PHN73)DK_HBA1	68	1413	67	1385	123	295	1	5	
OB8	CML449:N(PHN73)LH185	66	1342	64	1300	88	260	1	2	Midwest?
OB8	CML449:N(PHN73)LH212Ht	68	1398	67	1384	85	248	1	5	
OB8	CML449:N(PHN73)LH213	67	1370	66	1341	95	268	2	3	
OB8	CML449:N(PHN73)NC290	66	1342	65	1314	103	265	1	3	
OB9	DK68-04	65	1327	64	1300	93	248	2		
OB9	Pioneer 1498	65	1313	64	1300	85	245	1		
OB9	Pioneer 1637R	68	1413	67	1384	100	268	2		
OB9	Pioneer 1745R	68	1398	68	1398	98	265	2		
OB9	Pioneer 1794VYHR	68	1413	68	1413	110	283	2		
OB9	Pioneer 2088R	68	1398	67	1384	100	283	2		
OB9	Pioneer 2160YHR	69	1443	68	1399	103	280	1		
OB9	NC320/NC368	72	1505	71	1492	115	305	1		
OB9	HC33/TR7322	67	1384	66	1356	90	263	6		
OB9	Augusta 2956	65	1327	65	1314	85	245	3		
OB9	Doebler 561XY	66	1342	65	1328	70	238	1		

* For aspect rating, 1 is a cross that will definitely be used, 3 will probably not be used but is serviceable, 4 needs to be crossed again, and 5 is to be discarded.

& It is unclear at this moment if the CML78 we crossed is actually CML78 or CML108; various sources of both are being grown in winter nursery to see if there is a difference amongst our sources. The lines differ by pedigree but were very similar in the report by Romay et al.

Notes on GEM-Raleigh 2017 Breeding cross observations:

Exotic inbreds:

CML78: White grain CIMMYT line from Pool 32 (Subtropical white dent); the inbred used in these crosses may not actually be CML78; according to genotypic data collected by Romay et al., CML78 and CML108 are very closely related, but the pedigree records do not show that to be the case. We are currently looking into possible seed mix-ups.

CML178: Also from Pool 32, high ear position in crosses, may not be useful in 50% breeding crosses.

CML287: CIMMYT line from Population 24 (Yellow Tuxpeño); No combinations have yet been observed that provide decent ear position in 50% breeding crosses.

CML375: CIMMYT line from Population 44 (Boone County White/Tuxpeño); A few good combinations in 50% breeding crosses.

NC320: NC State inbred from (SC76/B52)/SC76 BC3; Plant health issues in all breeding crosses observed.

AC454: Line of unknown origin (found in Tifton, GA cold room), white grain, good combination with LH213.

89343: White grain line from IITA-Cameroon; high ear position in crosses, may not be useful in 50% breeding crosses.

CML312: White grain CIMMYT line from Population 500 (mix of commercial hybrids, Suwan, and CIMMYT germplasm); high ear position in crosses, may not be useful in 50% breeding crosses.

CML425 and CML430: Yellow grain lines from CIMMYT-Asia program

CML449: White grain line from Population 32 (ETO); several useful 50% combinations have been observed and some are currently in breeding program.

F4: Line of unknown origin, yellow grain, may not be useful in 50% breeding crosses.

F45 and F47: Appear to have been derived from Florida Synthetic by E. Horner; yellow grain, F45 had a few good combinations, while F47 was promising in combination with LH185.

Hi53: Line from Brewbaker's program, derived from ICA L210 (Colombia), no useful combinations were observed.

FL_4BT7: Line used as a tester by E. Horner; this line was used to test derivatives from FS8A(T). Yellow grain, promising in combination with LH185.

K0679Y: Yellow South African inbred from the F heterotic group, contributes lower ear position and ear rot resistance.

CML343, CML373, La Posta Sequia lines: White CIMMYT inbreds derived from Tuxpeño that have performed well in yield trials and that have been used extensively in GEM-Raleigh breeding efforts.

Mp715: Yellow grain inbred from Mississippi State ARS program; derived from Tuxpan and has resistance to aflatoxin accumulation

Q6199: White inbred from Australia (Tuxpeño background?); tall, late, needs second cross to be used in breeding program

Temperate inbreds:

LH193: Performed well in NC State yield trials, low ear position but mediocre plant health

LH195: Late flowering, esp. under short days, does not help with ear height

LH204: Early, decent plant health

NK_H8431: Very early, decent Y/M

PHEW7: Early, decent Y/M

PHHB4: Decent yield and Y/M, decent ear position

PHMK0: Relatively late maturity but great plant type and good yield

PHP38: Relatively early, decent yield, good plant health, low ear position; one of the more useful ex-PVPs on the SS side

PHT11: Poor plant health, will not use in the future

PHW52: Mixed results but did well for maturity and ear position in some combinations

DK_HBA1: Decent ear position but later-than-preferred maturity, good plant health

LH82: Very early, lowers ear position but also contributes to poor plant health

LH185: Good foliar health, ear position and maturity but very susceptible to ear rot (and stalk rot?)

LH212Ht: Plant health and ear height problems, may not use in future

LH213: Much better for plant health and ear height than LH212Ht; several useful combinations

NC290: NC State inbred (C103 background)

GEM x GEM highlight:

GEMN-0272: Very susceptible to ear rot *per se*, but contributed early maturity and lower ear position to combinations

Exotic populations/hybrids:

H5: Old white tropical hybrid from Rockefeller foundation (Cuban Flint and Tuxpeño)

HB 83: Old white tropical three-way hybrid from Central America; derived from CIMMYT germplasm ((Population 22 x Population 29) x Population 43)

ICA H-154: Hybrid from Colombia derived from Costeno

ICA H-260: Hybrid from Colombia derived from Tuxpeño x (ETO, Narino, etc w/ br)

ICA V-106: Synthetic from Colombia derived from Costal Tropical Flint

ICA V-156: Synthetic from Colombia derived from Tuxpeño

ICA V-206: Synthetic from Colombia derived from ten early lines

Various Celaya accessions: Celaya is a more modern derivative of Tuxpeño that is underrepresented in GEM germplasm, and therefore has become a focal point for our efforts. Most of the breeding crosses observed had high ear position and will need to be crossed at least one more time before entering the breeding program.

San Luis Potosi 146 (SLP146), BR31381, and Barbados Group 2 are accessions that performed well in LAMP but that have not seen much, if any, use in GEM thus far.

2017 Breeding Cross Observations - GEM Ames

Entry #	Pedigree	GDU Shed	GDU Silk	Plant Height (cm)	Ear Height (cm)	% Barren Plants	% Stalk Lodging	Stay green	Ear Position at Harv	Husk Tightness	Husk Length	Kernel Row #	Kernel type	Grain Texture	Ear Size Ames	Harvest Notes - Ames
1	B73/Mo17	1270	1283	297	113	0	6	5	9	3.5	4.5	14	D	5	8	
2	Pioneer 34R65	1355	1367	297	111	0	7	5	3	3	6	16	SD	6	7	
3	Pioneer 33F85	1292	1330	311	131	6	3	3	3	6	6	16	D	5	9	
4	Pioneer 31D58	1222	1222	308	104	0	0	6	2	6	4	14	D	5	9	huge ears
6	MBS3520/MBS8814	1305	1330	294	110	0	13	6	3	4	6	18	D	2	7	
5	MBS2655/MBS9508	1364	1387	314	122	0	16	7	3	5	6	18	D	6	8	
13	(PHP38/CML287)/R3212Z	1248	1248	305	110	0	13	5	2	5	5	18	SF	8	9	should be a '10' ; girthy, long, lustrous
33	(PHP38/89291)/FBLL	1355	1355	312	115	3	0	8	3	5	6	16	D	5	9	huge girthy ears; looks like a hybrid
44	(CML375/DK HBA1)/PHR03	1270	1258	285	100	0	13	3	1	4	6	16	SD/SF	6	9	heavy ear, good quality
10	(GEMS-0227/GEMS-0091)/F9214Z	1398	1419	285	108	6	0	6	3	6	6	18	D	6	8	nice, long ears
12	(PHP38/CML287)/LH195	1279	1283	283	97	14	19	4	3	6	4	18	D	7	8	lustrous, nice quality, long ear
24	(PHP38/CML423)/F9214Z	1330	1295	300	116	3	10	6	3	5	5	16	D	6	8	long, slender nice ears
25	(PHP38/CML423)/FBLL	1367	1398	293	111	8	0	5	2-9 (Var)	5	5	18	D/SF	6	8	girthy ear, nice quality
26	(PHP38/Ki43)/2FACC	1429	1440	314	131	6	0	8	5	4	7	16	SD	7	8	girthy, nice quality ears
27	(PHP38/Ki43)/FBLL	1398	1408	318	142	8	6	7	4	4	4	16	D	6	8	nice ears, excellent quality
36	(GEMN-0043/GEMN-0254)/PHR03	1398	1355	297	108	32	0	5	3	5	6	16	D	6	8	consistent, good quality
37	(GEMN-0097/GEMN-0259)/PHR03	1343	1364	299	107	9	17	5	7	5	5	16	D/SF	6	8	some mold; long, slender ear
43	(CML375/DK HBA1)/PHG47	1429		299	116	3	0	8	1	4	6	16	D	3	8	aborted tips, soft texture
49	(CML449/PHN37)/LH82	1318	1342	281	93	12	6	5	6	4	5	18	D	5	8	very heavy ears; good quality,
52	(DK HBA1/Ki21)/PHR03	1377	1364	287	93	10	0	5	3	4	5	18	SD/SF	7	8	consistent, great ears, heavy
7	(GEMS-0113/GEMS-0011)/F9214Z	1342	1367	295	113	11	3	5	3	5	5	16	SD/SF	6	7	ear shape and size variable
9	(GEMS-0227/GEMS-0091)/2FACC	1317	1355	299	117	6	4	4	4	2	5	14	D	6	7	soft txt, mixed y/w k
11	(CML105/LH193)/2FACC	1283	1305	279	89	15	20	4	4	6	4	14	D	5	7	lot of ears; var app, ear size small to girthy
15	(PHP38/CML343)/2FACC	1364	1343	312	123	6	6	6	2	6	4	16	D	4	7	girthy; soft txt; insect damage, mold
17	(GEMS-0227/CML343)/FBLL	1318	1343	301	119	15	9	4	4-7 (Var)	4	7	14	D	5	7	ok ears; segregating k color
18	(GEMS-0227/CML343)/R3212Z	1318	1318	293	113	6	4	6	5	6	6	14	D/SF	7	7	bad tips, ear smut, long slender
19	(CML373/LH204)/FBLL	1305	1318	301	114	3	3	6	4	4	5	16	D	5	7	nice quality; girthy, pale yellow k
20	(GEMS-0220/CML373)/FBLL	1313	1440	309	124	6	0	8	3	2	7	18	D	5	7	nice quality, girthy ear; seg k color; some insect damage
23	(GEMS-0227/CML373)/R3212Z	1398	1343	325	140	3	0	8	3	1	5	16	D/SF	5 (Var)	7	short, girthy ear; seg soft & flinty kernel types, flinty ears are small
28	(PHP38/Ki43)/LH195	1318	1330	308	116	8	3	4	2	4	4	16	SD/SF	6	7	excellent
29	(La Posta Seq C7 F64-1-1-1-B-B-B)/LH193)/F9214Z	1330	1355	296	108	0	14	6	4	5	4	16	SD/SF	6	7	long, slender ear, seg k color
30	(GEMS-0227/La Posta Seq C7 F64-1-1-1-B-B-B)/FBLL	1318	1355	291	110	15	3	3	7	6	5	16	D	4	7	seg k color, soft txt, girthy
31	(GEMS-0227/La Posta Seq C7 F64-1-1-1-B-B-B)/R3212Z	1305	1330	296	121	0	6	4	5	3	5	14	D	6	7	nice; ear tips not filled
34	(PHP38/89291)/R3212Z	1318	1367	290	112	17	14	4	4	7	5	14	D/SF	4	7	mold on butts of ears; long, slender ear; few ears

2017 Breeding Cross Observations - GEM Ames

Entry #	Pedigree	GDU Shed	GDU Silk	Plant Height (cm)	Ear Height (cm)	% Barren Plants	% Stalk Lodging	Stay green	Ear Position at Harv	Husk Tightness	Husk Length	Kernel Row #	Kernel type	Grain Texture	Ear Size Ames	Harvest Notes - Ames
35	(GEMN-0043/GEMN-0254)/PHG47	1318	1329	316	128	12	0	5	2	9	4	16	D	6	7	soft txt; some insect damage
38	(GEMN-0137/GEMN-0048)/PHG35	1418	1408	341	145	0	3	6	4-9 (Var)	6	5	16	D	5	7	nice ear; big, chunky k
41	(PHN37/CML313)/LH82	1364	1355	329	139	3	3	5	5	7	3.5	18	D	4	7	soft txt; segregating k color
42	(PHN37/CML313)/PHG35	1318	1318	327	132	0	13.839	4.5	5	5	4	14	D	5	7	long, heavy ears
47	(CML449/PHG47)/LH82	1292	1305	303	130	0	13	4	6	8	5	18	D	6	7	very heavy ears; good quality
48	(CML449/PHN37)/3IIH6	1295	1305	342	130	17	9	3	5	6	5		D	6	7	long, slender ear; nice quality
50	(CML449/PHN73)/3IIH6	1355	1377	324	135	8	7	6	5	8	4	16	D/SF	7	7	nice; some early Japanese beetle silk clipping
51	(DK HBA1/Ki21)/PHG47	1330	1354	337	131	0	11	5	3	8	5	16	D	5	7	big, heavy ears; some tip damage
53	(LH185/Ki21)/PHG47	1318	1305	316	128	10	18	7	4	3	5	16	D	5	7	nice quality, slender ear
54	(Ki43/PHKE6)/3IIH6	1408	1419	330	149	7	6	6	3	3	5	16	SF	7	7	tapered ear, good quality
8	(GEMS-0113/GEMS-0011)/LH195	1318	1355	295	119	9	6	7	3	4	5	16	D	6	6	small ears, well-filled, small k
21	(GEMS-0220/CML373)/R3212Z	1330	1330	320	119	3	11	4	4	6	4	14	D	6	6	segregating for grain texture, color, ear size
22	(GEMS-0227/CML373)/FBLL	1260	1260	272	104	4	52	3	6	5	5	16	D	4	6	short, girthy ear; variable quality & kernel color; mold on eartips
32	(La Posta Seq C7 F71-1-1-1-2:S40a)/R3212Z	1305	1305	317	119	5	3	3	3-9 (Var)	8	6	14	D	5	6	Diplodia, Gib on kernels and cobs; long, slender ear
40	(PHN37/CA00370)/PHG35	1270	1279	279	110	0	25	3	4-9 (Var)	4	6	14	D/SD	4	6	variable quality; some Fusarium
45	(CML375/PHKE6)/3IIH6	1318	1305	328	128	0	13	4	3	4	6	18	D/SF	6	6	variable ear size, quality
46	(GEMN-0048/CML375)/PHG35	1355	1367	311	138	9	3	6	4	6	4	18	D	4	6	variable ear size; girthy, soft texture
16	(PHP38/CML343)/LH195	1409		322	139	0	17	6	4	6	6	16	D	6	5	segregating k color
39	(PHN37/CA00370)/LH82	1292	1305	315	123	6	22	5	5	4	5	16	D	5	5	aborted tip k; poor stand
14	(LH193/CML312)/R3212Z	1318	1318	322	120	3	12	6	3	6	5	14	D/SF	5	3	small ear, poor quality, moldy

* Data is average of 2 reps grown in Ames, IA in 2017

Legend:	Stalk Lodging = % of Stand Lodged
	Stay green 1-9; 1 = no green tissue remaining, 9 = healthy & green
	Husk Extension 1-9; 1= very short with ear tip exposed, 5= husk just covers tip; 7 = 1" extension past tip, 9=2" or more extension past ear tip
	Husk Tightness 1-9; 1 = very loose, 9=very tight with many thick husks
	Ear Position at Harvest 1-9; 1=upright, 5= horizontal; 9 = drooping

2017 Breeding Cross Observation Data - Ames, IA - NIR Traits

Entry #	Pedigree	MOIST	Protein	Oil	Starch	Density
1	B73/Mo17	8.1	9.0	4.4	72.4	1.25
2	Pioneer 34R65	8.1	10.2	4.4	71.5	1.32
3	Pioneer 33F85	8.2	9.0	4.5	72.3	1.30
4	Pioneer 31D58	8.2	8.9	4.2	72.9	1.32
5	MBS2655/MBS9508	7.9	10.2	4.9	71.1	1.37
6	MBS3520/MBS8814	8.4	10.8	4.7	70.7	1.32
7	(GEMS-0113/GEMS-0011)/F9214Z	8.3	11.5	4.8	70.2	1.35
8	(GEMS-0113/GEMS-0011)/LH195	8.3	10.5	5.2	70.5	1.31
9	(GEMS-0227/GEMS-0091)/2FACC	8.1	10.1	4.5	71.5	1.31
10	(GEMS-0227/GEMS-0091)/F9214Z	7.9	11.1	4.9	70.4	1.36
11	(CML105/LH193)/2FACC	8.2	10.1	4.7	71.5	1.34
12	(PHP38/CML287)/LH195	8.0	9.4	4.7	71.9	1.28
13	(PHP38/CML287)/R3212Z	8.3	8.8	4.2	73.0	1.34
14	(LH193/CML312)/R3212Z	8.3	10.4	4.8	71.3	1.35
15	(PHP38/CML343)/2FACC	8.3	9.9	4.9	71.3	1.32
16	(PHP38/CML343)/LH195	8.5	9.6	4.6	71.8	1.33
17	(GEMS-0227/CML343)/FBLL	8.1	10.7	4.5	71.1	1.30
18	(GEMS-0227/CML343)/R3212Z	8.2	10.3	4.7	71.4	1.35
19	(CML373/LH204)/FBLL	8.2	10.4	4.5	71.3	1.34
20	(GEMS-0220/CML373)/FBLL	8.5	11.0	5.0	70.0	1.35
21	(GEMS-0220/CML373)/R3212Z	8.3	10.7	4.7	70.8	1.30
22	(GEMS-0227/CML373)/FBLL	8.2	10.6	4.8	70.9	1.35
23	(GEMS-0227/CML373)/R3212Z	8.3	9.8	5.0	71.5	1.36
24	(PHP38/CML423)/F9214Z	8.3	9.2	4.4	72.5	1.32
25	(PHP38/CML423)/FBLL	7.9	9.1	4.8	72.1	1.31
26	(PHP38/Ki43)/2FACC	8.3	12.3	4.9	69.2	1.35
27	(PHP38/Ki43)/FBLL	8.5	11.5	4.7	70.2	1.35
28	(PHP38/Ki43)/LH195	7.9	9.7	4.6	71.7	1.33
29	(La Posta Seq C7 F64-1-1-1-B-B-B/LH193)/F9214Z	8.2	10.5	4.8	71.1	1.37
30	(GEMS-0227/La Posta Seq C7 F64-1-1-1-B-B-B)/FBLL	8.1	10.5	4.5	71.3	1.33
31	(GEMS-0227/La Posta Seq C7 F64-1-1-1-B-B-B)/R3212Z	8.1	9.9	4.5	71.8	1.31
32	(La Posta Seq C7 F71-1-1-1-2:S40a)/R3212Z	8.1	10.9	4.9	70.5	1.34
33	(PHP38/89291)/FBLL	8.3	9.6	4.3	72.0	1.34
34	(PHP38/89291)/R3212Z	8.2	10.5	4.6	71.2	1.33
35	(GEMN-0043/GEMN-0254)/PHG47	8.1	11.1	4.8	70.5	1.33
36	(GEMN-0043/GEMN-0254)/PHR03	8.2	11.2	4.9	70.3	1.37
37	(GEMN-0097/GEMN-0259)/PHR03	8.2	10.0	4.7	71.6	1.33
38	(GEMN-0137/GEMN-0048)/PHG35	8.4	10.5	4.4	71.4	1.34
39	(PHN37/CA00370)/LH82	8.1	10.1	4.6	71.6	1.31
40	(PHN37/CA00370)/PHG35	8.2	10.8	4.4	71.2	1.35

Entry #	Pedigree	MOIST	Protein	Oil	Starch	Density
41	(PHN37/CML313)/LH82	8.2	10.2	4.4	71.7	1.32
42	(PHN37/CML313)/PHG35	8.1	10.9	4.2	71.1	1.33
43	(CML375/DK HBA1)/PHG47	8.5	10.9	5.0	70.5	1.34
44	(CML375/DK HBA1)/PHR03	7.8	9.1	4.1	72.7	1.32
45	(CML375/PHKE6)/3IIH6	8.1	10.1	4.7	71.6	1.35
46	(GEMN-0048/CML375)/PHG35	8.2	9.8	5.0	71.3	1.31
47	(CML449/PHG47)/LH82	8.1	11.4	4.7	70.2	1.35
48	(CML449/PHN37)/3IIH6	8.3	11.7	4.6	70.1	1.33
49	(CML449/PHN37)/LH82	8.2	9.9	4.5	71.7	1.32
50	(CML449/PHN73)/3IIH6	8.2	10.3	4.9	71.0	1.33
51	(DK HBA1/Ki21)/PHG47	8.6	11.0	4.6	70.7	1.31
52	(DK HBA1/Ki21)/PHR03	8.4	10.3	4.8	71.0	1.33
53	(LH185/Ki21)/PHG47	8.1	10.0	5.2	70.8	1.30
54	(Ki43/PHKE6)/3IIH6	8.4	9.6	4.7	71.8	1.34

*Data is average of two reps of harvested, open-pollinated ears from the Breeding Cross obs plots harvested in Ames, IA and analyzed in Dr. Paul Scott's laboratory.

Annual Reports

2017 Annual Report of the GEM Project, Ames, IA and Raleigh, NC

PERSONNEL:

Ames: *USDA-ARS Plant Introduction Research*

Dr. David Peters, Ames GEM Coordinator
 Michael Peters, GEM Technician
 GEM Support Scientist (vice-Engstrom, Vacant)
 Dr. Mack Shen, IT Specialist

Dr. Candice Gardner, Research Leader

Raleigh: *USDA-ARS Plant Science Res.*

Dr. Matt Krakowsky, Southeast GEM Coordinator
 Dr. Peter Balint-Kurti, Research Geneticist
 Dr. Jim Holland, Maize Research Geneticist
 Dr. David Marshall, Research Leader

Raleigh: *North Carolina State University*

Dr. Major Goodman, William Neal
 Reynolds Distinguished Professor
 Dale Dowden, Technician

GEM - Ames Highlights

Midwest Germplasm releases and development:

- Three hundred and two (302) GEM releases will now be available to GEM Cooperators. A total of 319 (302+17) have been released, including those from our university collaborators.
- Seven GEM lines from the Ames program are proposed for release to GEM Cooperators for the 2018 planting year. Yield data, and NIR results for protein, oil, and starch can be found online and in the handout for 2018 released lines. Ear and grain characteristics are presented in Table 5, topcross maturity and ear height in Table 6, and NIR information in Table 7.
- Three of the seven releases are second cycle GEM lines from GEMS-0113, derived from CHIS775, a Tuxpeño line from Mexico; GEMS-0115, derived from DKB884, a tropical hybrids from Mexico; GEMS-0162, derived from CUBA117, an Argentino line from Cuba; GEMS-0219, derived from CUBA164, a Creole line from Cuba; GEMS-0222, derived from MBRD10, a multiple borer resistant composite from Mexico; and GEMS-0227, derived from NEI9004, a tropical inbred from Thailand.
- Summary tables of test cross data are presented in the section of this book tabbed 'Released Lines.'

Table 4. 2018 Ames-GEM Germplasm Releases (7)

GEM Code	Pedigree	Race	Country	Type	Het. Group
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	Tuxpeño Argentino	Mexico Cuba	25% Exotic	SS
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	Tropical Hybrid Borer Composite	Mexico	25% Exotic	SS
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	Creole Tropical Inbred	Cuba Thailand	25% Exotic	SS
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	Tropical Hybrid Tropical Inbred	Mexico Nigeria	25% Exotic	SS
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	Suwan	Thailand	25% Exotic	SS
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	Suwan	Thailand	25% Exotic	SS
GEMN-0302	ATL100:N(LH82)(GEMN-0097)-041-001	Tropical Hybrid	Brazil	25% Exotic	NSS

Table 5. Ear and Grain Traits of the 2018 GEM-Ames Released Lines

GEM Code	Poll GDU	Cob Color	Grain color	Grain Texture
GEMS-0296	1310	Red	Yellow	Semi-Dent
GEMS-0297	1364	Red	Yellow	Semi-Dent
GEMS-0298	1338	Red	Yellow	Dent
GEMS-0299	1364	White	Yellow	Dent
GEMS-0300	1488	Seg R/W	Yellow	Semi-Flint
GEMS-0301	1437	Red	Yellow	Dent
GEMN-0302	1393	White	Yellow	Dent

Table 6. Topcross Maturity of 2017 Ames-GEM Germplasm Releases

Top Cross RM & Ear Height Estimates			
GEM Code	Pedigree	Average	
		Estimated RM	Ear Height (cm)
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	110	120
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	110	120
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	110	105
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	110	115
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	111	115
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	111	115
GEMS-0302	ATL100:N(LH82)(GEMN-0097)-041-001	108	120
	Hybrid Checks		
	MBS2655/MBS9508	~109-110	100
	MBS3520/MBS8814	~111	120
	34R65	~109	100
	33F85	~110	110
	31D58	~114	115

Whole grain composition analysis was generated using an NIR FOSS 1241 Grain Analyzer in Dr. Paul Scott's lab (USDA-ARS CICGRU). Samples were obtained from a bulk of at least 8 ears from self-pollinated rows, and are presented in Table 6.

Table 7. NIR Trait Data of 2018 GEM-Ames Line Releases

Code	Pedigree	MOIST	Protein	Oil	Starch	Density
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	9.1	16.1	4.9	65.0	1.372
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	9.1	9.6	4.2	71.9	1.347
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	9.5	11.2	3.6	71.3	1.339
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	9.2	11.4	3.5	71.3	1.385
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	9.8	11.7	3.7	70.7	1.348
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	9.1	11.8	3.7	70.8	1.33
GEMS-0302	ATL100:N(LH82)(GEMN-0097)-041-001	8.6	11.6	4.1	70.2	1.357

New Germplasm:

- Kasetsart University provided 10 tropical inbred lines and two tropical populations to the GEM Project, which have been received and are being increased in greenhouse quarantine this winter. They also graciously agreed to their incorporation into the NPGS maize collection.

KI20	KI46	KI49	KI59	Kei1303
KI30	KI47	KI55	KI60.	Kei1519
KI45	KI48	KI57	Kei1421	KS23, Cycle 3 population
				KS23, Cycle 5 population

2017 Research & Breeding Activities:

- Twelve new breeding cross populations were sent to five Cooperators for in-kind support.
- Forty-four families of S1 ears were advanced to S2 in Ames, and two were advanced by Cooperators. These S2s will be topcrossed in isolated blocks in 2017.
- Two shade structures were utilized to generate new 50% and 25% exotic breeding crosses. 201 new 50% exotic crosses and 87 new 25% exotic crosses were generated. Special focus was placed in initiating populations with key Celaya and La Posta Seq lines. Table 8 provides a summary of the lines included in the shade structure.

Table 8: Generation of Breeding Crosses in 2017 Ames Photoperiod Control Shade House

Pollen Donors			Temperate Females	
Generation	Pedigree	Cross To	Heterotic Group	Pedigree
F1	Celaya-GTO36/PHP38	SS	SS	2FACC
F1	Celaya-GTO84/PHP38	SS	NSS	3IIH6
F1	La Posta Seq C7 F64-1-1-1-1-B-B-B-1/LH197	SS	SS	FBLL
F1	La Posta Seq C7 F64-1-1-1-1-B-B-B-1/LH195	SS	NSS	HBA1
F1	La Posta Seq C7 F64-1-1-1-1-B-B-B-1/PHP38	SS	NSS	LH168
F1	La Posta Seq C7 F64-1-1-1-1-B-B-B-1/LH204	SS	NSS	LH185
F1	La Posta Seq C7 F64-1-1-1-1-B/LH197//PHW52	SS	SS	LH195
F1	KS23-6/PHP38	SS	SS	LH204
F1	KS23-6/PHW52	SS	SS	LH225
F1	KS23-6/LH204	SS	NSS	LH82
	La Posta Seq C7 F180-1-2-2-1-B-B-B	SS	NSS	MBWZ
	La Posta Seq C7 F64-1-1-1-1-B-B-B	SS	SS	PHG39
	La Posta Seq C7 F64-1-1-1-2-B-B-B	SS	NSS	PHGG7
F1	KO679Y/La Posta Seq C7 F64-1-1-1-2-B-B-BJ01	SS, NSS	SS	PHHB9
	CML 264	SS	NSS	PHJ33
	CML 373	SS	SS	PHK29
	KS23-3	SS	NSS	PHN18
	KS23-5	SS	SS	PHP38
	KS23-6	SS	NSS	PHR55
	GTO 36	SS	NSS	PHV53
	Celaya-GTO84	SS	SS	PHW51
	CML 349	SS, NSS	SS	PHW52
	KO679Y	SS, NSS	NSS	PHW86
	CML 78	NSS	NSS	PHZ51
	CML 311	NSS		
	CML 321	NSS		
	CML 323	NSS		
	CML 384	NSS		

- Winter nursery options were expanded to include a company in the Puerto Vallarta area of Mexico. The company completed contractor registration in the USDA system and is now eligible to bid on GEM winter nurseries and isolations.
- Yield testing managed by the Ames GEM Program was expanded to a fifth location at Atlantic, Iowa. This new site is located in SW Iowa and has a history of heavy Fusarium stalk rot pressure. Trials planted this year showed good separation for the associated stalk lodging.

Host Plant Resistance

- 2017 disease data will be posted online at our website (<http://www.public.iastate.edu/~usda-gem/>) in January. Mack Shen has added all historical disease evaluation information to the PRISM database.
- Pathology and entomology research collaborators from the U.S. private and public sectors screened GEM releases for Northern Leaf Blight (NLB), Southern Leaf Blight (SLB), Goss's Bacterial Wilt (GW), Gray Leafspot (GLS), Fusarium ear rot (DIPPER), Anthracnose Stalk Rot (ASR), Aspergillus (aflatoxin and other mycotoxins), and Bacterial Leaf Streak (BLS).
- International collaborators evaluated GEM releases for Late Wilt, agronomic traits, and ear mold.

Appreciation is extended for all in-kind support and extensive efforts by private and public GEM Cooperators:

- AgReliant Genetics (Idris Amusan) provided data for ASR, GLS, and NLB.
- DuPont/Pioneer Hi-Bred International (Marc Mancl at Woodland, CA) provided Fusarium ear mold data; Northern leaf blight disease development simply did not progress in central Iowa this year (Scott Heuchlin and Rick Blum).
- Monsanto (Clint Turnbull) provided data for GW.
- Professional Seed Research (Jim Dodd) provided data for NLB.
- USDA-ARS-PSRU in Raleigh, NC provided data for GLS, SLB (Peter Balint-Kurti) and Fusarium ear rot (Jim Holland).
- USDA-ARS-CHPRRU, Mississippi State, MS (Paul Williams and Gary Windham) evaluated aflatoxin in grain.
- USDA-ARS-PGRU, Columbia, MO provided data for Corn Rootworm evaluations for root regrowth.
- University of Nebraska, Lincoln (Tamra Jackson-Ziems, James Harbour, Brad Tharnish) provided data for BLS.
- Wyffels Hybrids (Chris Eichhorn) provided data for GW.

Ames 2017 Allelic Diversity (AD) and Double Haploids (DH):

- The Iowa State University Doubled Haploid Facility continues to partner with the GEM Project on development of DH lines. Approximately 204 lines (representing ~52 races) were jointly released by ISU and USDA-ARS in 2014 as part of the Allelic Diversity Project. Approximately 24 sets of these lines have been distributed to requestors, and numerous small subsets have been requested. They provide unique genetic resources for a wide variety of research applications. A new set of BGEMS will be released in 2017, pending processing and quality assurance.
- DH₁ lines were increased (254 rows), 22 lines that have been assigned BGEM codes were increased for distribution and 42 candidates for coding were increased and evaluated.
- DH₁ lines generated by Monsanto from AD BC₁'s supplied by the Raleigh program were planted in the nursery for increase and observation. Nearly 400 rows involving 35 landraces in 36 populations were included.
- DH₀ and DH₁ lines of from AgReliant were increased and evaluated. Selected lines from the 205 DH₁s will be topcrossed in 2018 for 2019 testing.
- Dr. Uschi Frei provided rows in her induction iso to induce 147 new BC₁'s received from Raleigh.
- We did not advance any BC₁F₇ allelic diversity project germplasm in 2017. This effort has been tabled for now.
- Please see Raleigh-GEM's report on their AD efforts, as Raleigh generates the BC₁ lines that are transferred to Ames for induction.

Ames 2017 Yield Test, Nursery and Other Highlights:

- Cooperator in-kind support contributions are detailed in Table 5.
- Approximately 18,000 plots (3438 entries) were managed or coordinated through Ames in 2017.

Trial Type	# Entries	# Plots - Ames GEM	# Plots - Private Coops	# Plots - Raleigh GEM	Total Plots
1st Year Trials	1644	8220	1644		9864
Retest Trials	516	2580	1452	96	4128
Released Line Trials	336	1344	1188	228	2760
B73 & Oh43 TPX Trials	552	1104			1104
Collaborator Exps*	390	1980			1980
Totals	3438	15228	4284	324	19836

* Includes Raleigh-GEM experiments grown in Ames and exchange plots with cooperators.

- Of the core development program, 4128 plots (29.5%) were devoted to 2nd year trials and 9864 (70.5%) were in 1st year trials. We lost 17 test replications due to weather or herbicide damage issues.
- One hundred forty-one (141) top crosses out of 1,931 entries exceeded the mean yield of the check hybrids in Midwest trials in 2017. Of the 141 hybrids that exceeded the mean, 105 were from first year trials, and 36 from second year trials.
- The five standard checks used in this year's trials included:
MBS2655/MBS9508 MBS3520/MBS8814
Pioneer 34R65 Pioneer 33F85 Pioneer 31D58.
- As you review the yield trial information, keep in mind the nomenclature of the GEM trial naming system:
 - First two digits are the year, i.e. "15" for year 2015
 - Third digit is for homologous area (1=tropical, 5=temperate, 6=both, 7=other)
 - Fourth digit indicates percentage of exotic; 0 = mix of 25% or 50% exotic derived; 2=50% exotic; 3 = 25% exotic; 4 = other (i.e. GEM x GEM or cooperator derived germplasm);
 - Fifth digit is the testing stage (1=1st year test, 2=2nd year test, 3=other)
 - Sixth and seventh digits are sequential numbers.
 - For example: "1652102" would be a 1st year TPX trial grown in 2016, comprised of temperate 50% exotic crosses.

Nursery and isolation rows:

- Approximately 12441 nursery rows were pollinated
 - 4275 selection rows
 - 832 various types of increase rows
 - 416 crossing block rows
 - 40 collaborator nursery rows
 - 728 observation rows
 - 1198 Ames isolation rows
 - 160 isolation rows were contributed by CRD
 - 1965 isolation rows were contributed by MBS Genetics
 - Not included in the count are the numerous nursery rows grown by cooperators for in kind support to generate breeding crosses, S1 families, etc.
- Forty-eight new breeding crosses were observed and evaluated for breeding potential in Ames, IA. Results are presented in the section labeled 'Breeding Crosses'.

Quality Traits (including grain mold/mycotoxin)

- The newly released GEM lines were not noteworthy for protein, oil, or starch traits.
- Mold and mycotoxin data have been received and will be posted to the website. Three GEM Ames lines (GEMS-0237, GEMS-0241, GEMS-0262) showed low aflatoxin levels in 2017 trials.

New GEM Cooperators in 2017:

One new private U.S. Cooperator joined the GEM Project in 2017. Longping High-Tech Seeds LLC or Capron, Illinois. One new international public Cooperator joined the GEM Project in 2017. Kasetsart University of Bangkok, Thailand was accepted in August. Two others have expressed interest.

Field Days:

Ames, IA GEM Project 2017 Field Day: Approximately 80 visitors participated in the 2017 Ames GEM Field Day on Thursday, September 14th. Several groups of students, breeders, and the general public continued to visit through mid-October, including numerous international visitors.

Top 10 Project:

- The purpose of the ‘Top 10’ project was to test the released lines considered to be among the best of the SS and NSS GEM releases on an array of testers, sufficient to calculate GCA and SCA estimates. The information would be used to assess potential value of the top 10 SS and top 10 NSS lines for recycling in different breeding programs and other purposes, and inform on best heterotic combinations.
- The top 48 GEM release lines programs (Table 10) were distributed to five private sector TSG members (from AgReliant Genetics, Dow AgroSciences, DuPont-Pioneer, Monsanto, Syngenta) for inclusion in 2016 winter nurseries. The lines were crossed to current elite testers from each program and included in 2017 yield trial experiments within each company. Companies used 1 or 2 testers, resulting in a total of 8 testers.
- Yield trials were planted at 47 locations including sites inside and outside of the Corn Belt.
- Yield trial data and observations have been received and are currently being evaluated. General combining ability (GCA) and specific combining ability (SCA) are being determined for this set of top GEM releases. Preliminary analyses of the data has provided some insights on the GEM lines included in the study. Analyses will continue and results will be published following completion of a second year trial in 2018.
- Hybrids tested in 2017 are currently being remade at winter nursery sites by the companies for 2018 trials.
- Initial review of the data has provided some insights of the GCA and SCA of the top GEM releases. These insights will help guide and accelerate recycling within GEM. The information will also provide valuable guidance to GEM cooperators doing breeding and line development.

Ames GEM Program Goals

The Ames GEM Program has identified several areas for changes planned for 2018 and beyond. Progress toward goals established via the 2016 GEM review is being made and further refinements will be made in 2018.

Nursery:

- Efforts to generate new breeding cross populations of 50% and 25% exotic content will be included as an annual focus of the program. The breeding cross observation system will be organized to evaluate 100-120 25% exotic populations each year at a minimum of 3 sites (to be determined)

Isolated Crossing:

- Isolated crossing capacity will be expanded through internal and available in-kind support capacity.

Disease Evaluation:

- Domestic evaluation capacity for key diseases such as Goss’s Wilt and Bacterial Leaf Streak will be explored to provide enhance documentation of released GEM lines and candidate lines.

- Options to expand international disease evaluation capacity for diseases not yet in the US will be explored within our cooperator network, and cooperators sought who can contribute.

Table 10. 47 Lines Included in the ‘Top 10’ Project

Origin	GEM NS lines	Background	Origin	GEM SS lines	Background
Ames	GEMN-0048	DKXL370 (Brazil)	Ohio State	GEMS-0002	FS8A(s)
Ames	GEMN-0096	DKXL370	Raleigh	GEMS-0027	DKXL370 (Brazil)
Ames	GEMN-0097	FS8B(T)	Raleigh	GEMS-0032	DKXL380 (Brazil)
Ames	GEMN-0098	FS8B(T)	Ames	GEMS-0049	DKB844 (Mexico)
Raleigh	GEMN-0104	DK888 (Thailand)	Ames	GEMS-0050	DKB844 (Mexico)
Raleigh	GEMN-0124	DK212T (Brazil)	Ames	GEMS-0061	Cristalino Colorado (Argentina)
Raleigh	GEMN-0135	DKXL380 (Brazil)	Ames	GEMS-0066	Argentino (Cuba)
Ames	GEMN-0144	Cuban Yellow (Peru)	Ames	GEMS-0072	Tuxpeno (Mexico)
Ames	GEMN-0157	Dente Amarello (Brazil)	Ames	GEMS-0093	Cuba 164 (Mixed Creole)
Ames	GEMN-0177	DK888 (Thailand)	Ames	GEMS-0113	Tuxpeno (Mexico)
Ames	GEMN-0178	DK888 (Thailand)	Ames	GEMS-0115	DKB844 (Mexico)
Ames	GEMN-0187	Antigua	Ames	GEMS-0142	Dente Amarelo (Brazil)
Ames	GEMN-0192	Tuson (St. Croix)	Ames	GEMS-0147	Thailand inbred
Ames	GEMN-0207	Cateto (Brazil)	Ames	GEMS-0200	Suwan Composite (Brazil)
Ames	GEMN-0225	Suwan Composite (Brazil)	Raleigh	GEMS-0215	Thailand inbred
Raleigh	GEMN-0232	Tuson (St. Croix)	Ames	GEMS-0219	GEM x GEMS-0002; Cuba 164 x FSA8(s)
Ames	GEMN-0238	Thailand inbred	Ames	GEMS-0220	GEM x GEM; Tuxpeno / Olotillo
Raleigh	GEMN-0257	Tuxpeno (Mexico)	Ames	GEMS-0226	Tuxpeno Composite (Brazil)
Raleigh	GEMN-0270	Croiollo (Antigua)	Ames	GEMS-0227	Thailand inbred
Raleigh	GEMN-0271	Suwan Composite (Brazil)	Ames	GEMS-0235	Criollo/Tuso (Cuba)
		GEMN-0043 x GEMN-0097			
Raleigh	GEMN-0272	Cateto / FS8B(T)	Ames	GEMS-0237	DKXL370 (Brazil)
		GEMN-0108 x GEMN-0178			
Raleigh	GEMN-0287	DK888 / DK888			
			Raleigh	GEMS-0243	CML 287 (CIMMYT)
			Raleigh	GEMS-0245	DK888 (Thailand)
			Raleigh	GEMS-0255	FS8B(S)
			Raleigh	GEMS-0258	DKB830 (Mexico)
					GEMS-0032 x GEMS-0113
			Raleigh	GEMS-0274	DKXL380 / Tuxpeno

Collaborator in-kind support in 2017 is summarized in Table 7.

Table 9. Private In-Kind Support – Summer 2017

Collaborator	Breeding & Nursery Support	Made Top Cross	Yield Trials	Disease Screening	'Top 10 Project' Trials
Ag Reliant Genetics LLC		X	X	X	X
Becks Superior Hybrids			X		
Brown Seed Company			X		
CRD		X	X		
Masters Choice	Made S1's of (GEMS-0113/CML103)/GEMS-0227, SX2788:S(794)(GEMS-0188)/GEMS-0227, (GEMN-0104/GEMN-0187)/GEMN-0192, (GEMN-0173/KO679Y)/PHR5				
DKD Genetics	Made S1's of (GEMS-0227/Ki14)/PHG39, ((LH61/(GEMN-0130/MP494))/PHN46		X		
Dow AgroSciences		X	X		X
DuPont-Pioneer	Generated 458 S2 lines from 4 populations	X	X	X	X
GEM-Raleigh			X	X	
Illinois Foundation Seed, Inc.			X		
KMR (Summit Genetics)			X		
Longping	Made S1's of (GEMN-0097/PHN46)/PHGG7, BG002:T26aN(GEMN-0155)PHGG7), (PHN46/(GEMN-0130/MP494))/41		X		
MBS Genetics		X			
MDS			X		
Misr Hy Tech				X	
Monsanto Company	Generated 400 AD DH lines, Made S1's of GEMS-0219/(GEMS-0147/GEMS-0227), (GEMN-0103/GEMN-0097)/GEMN-0192	X	X		X
Professional Seed Research				X	
Terrell Seed Research	Made S1's of (GEMN-0043/GEMN-0108)/GEMN-0155				
Syngenta			X		X
Wyffels Hybrids			X	X	

Sincere thanks for the dedication and efforts of the maize community to ensure the availability of useful maize genetic diversity, and especially for their support of the GEM projects in Ames and Raleigh.

2017 Annual Report of the GEM Project

GEM-Raleigh Highlights

Germplasm releases:

- No GEM lines are being recommended from the Raleigh program in 2018. Yield data for EXK7 (second year GEM entries) can be found in this book or on the GEM website (after January 1). While there were at least two entries that performed well enough in yield trials to merit recommendation, seed production in the nursery was poor (i.e., ear rots and poor seed set) and the entries will be re-examined next summer for possible release in 2019.

Germplasm development:

- Approximately 1600 GEM nursery plots and 800 GEM isolation plots were grown in Clayton, NC, while 760 nursery plots were planted in Homestead, Florida in October. We are also planting 150 plots in Puerto Vallarta this winter to examine seed returns and flowering times.
- S₁ families were developed from twelve breeding crosses:

ATL100:S(PHP38)	GEMN-0097/GEMN-0135
CA00370:N(GEMN-0097)N40x	GEMN-0124/GEMN-0104
CML373:S(GEMS-0227)	GEMN-0232/GEMN-0048
CML375:S(PHP38)	GEMN-0135/GEMN-0137
CML424:N(LH185)	La Posta Sequia C7 F64-1-1-1-1-B:S(GEMS-0227)
CML449:N(GEMN-0097)N40x	La Posta Sequia C7 F71-1-1-1-2-B:S(GEMS-0220)
- Families from thirty-six GEM breeding crosses were advanced from S₁ to S₂:

DTPY C9/G18)-60-1-1-1-1:S(LH195)	CML373:S(LH195)
(MBR/MDR C3 AMS1/G18)-123-2-2-2-3:S(LH195)	CML449:N(PHN37)
G17(C34)HS208-1-2-2-2:N(DK_HBA1)	CML494:S(LH195)
Pool 33-128-1-1:N(DK_HBA1)	GEMS-0113/GEMS-0006
FL_4BT7:N(DK_MM402A)	GEMS-0220/GEMS-0027
89291:S(GEMS-0220)	GEMN-0124/GEMN-0135
(CML423.KO679Y):S(LH195)	GEMN-0104/GEMN-0232
(N3-2-3-3.KO679Y):S(LH195)	GEMN-0097/GEM-0048
(CML438.KO679Y):S(LH195)	CML313:N(LH185)
(89291.KO679Y):S(LH195)	CML343:S(LH193)
(CML423.CML277):S(PHP38)	CML373:S(LH193)
(89291.CML277):S(PHP38)	CML373:S(PHP38)
(N3-2-3-3.CML277):S(PHP38)	CML449:N(LH185)
(CML343.CML423):S(PHP38)	CML449:N(PHG47)
(CML343.N3-2-3-3):S(PHP38)	La Posta Sequia C7 F64-1-1-1-1-B:S(LH193)
(CML422.CML313):N(LH185)	La Posta Sequia C7 F64-1-1-1-1-B:S(PHP38)
Population 33 (IST) C2:N(DK_HBA1)	La Posta Sequia C7 F71-1-1-1-2-B:S(LH193)
Population 45 (IST) C2:S(LH195)	Ki21:N(LH185)
- Eighteen new GEM x GEM combinations (Raleigh x Raleigh and Raleigh x Ames releases) were produced based on the head-to-head performance of GEM releases in yield trials.
- Eleven new breeding crosses were developed between accessions (incl. CIMMYT populations) and GEM-Ames releases (GEMN-0048 and GEMN-0097).
- Development of over 200 new breeding crosses is being attempted in winter nursery, mostly combinations of exotic accessions and inbreds x temperate inbreds (50% exotic; see end of report for list of exotics).

Germplasm Evaluations:

- Overall, about 8300 yield plots were coordinated from Raleigh, with 4600 planted at five locations in NC and the rest planted by six cooperators at thirteen locations throughout the Southeast and Midwest.
- Twenty-two experimental entries were evaluated at eighteen locations in second-year trials (EXK7; see Yield Trials section and above releases).
- Two hundred and eighty-eight entries were evaluated in first-year trials, twenty-nine of which will be evaluated in second-year trials in 2018, along with a few of the top performing entries from EXK7.
- Evaluations of GEM releases from Raleigh and Ames were included in EXK7 to identify lines with the best potential for use in GEM x GEM crosses; entries included GEM releases that have performed well in previous trials as well as newer entries that had not yet been evaluated in head-to-head experiments. Summary tables are presented in the Yield Trials section of this booklet, and complete results will be available on the GEM website after January 1. Recycling efforts will continue in 2018 with the best lines from EXK7 and earlier GEM releases.
- Experiment L4 contains tropical inbreds crossed to Pioneer 1498; this is a second year trial of entries that performed well in trials EXL4 and EXL5 in 2016. There were few notable entries that were already known to the project (e.g., CML343, CML373 and La Posta C7 F71-1-1-2-B have already used in breeding efforts), but CML169, CML453 and 90313 (the latter from IITA-Cameroon) will be considered for new breeding crosses.
- Experiment M6 contains hybrid combinations of ex-PVP inbreds with the goal of identifying one or more hybrids that could be useful as a tester(s) for exotic germplasm that does not fit the standard US heterotic pattern. PHMK0/LH213 had the best combination of yield, moisture and ear height.
- Experiment M7 contains F1s that were developed as part of the allelic diversity project. Some of the better performing accessions were from Argentina, Uruguay and the British Virgin Islands, the latter from a list of Caribbean accessions that were recommended by Wilfredo Salhuana. The accessions in the best performing entries will be used in development of new breeding crosses; there are no plans to use the crosses with PHB47 and PHZ51 directly in the breeding program.
- Experiment M8 contains mostly exotic germplasm that was crossed to SSS and nSSS testers, some of which will be used in breeding cross development in the future.
- Experiment M9 consists primarily of entries from Experiment 34 in 2016, but for this trial the tester is a nSSS line from Dow.
- Experiments 81 and 87 are trials that were conducted by Major Goodman in 2016 and 2017 at 10 locations overall in North Carolina. EX81 is similar to EXM6 but with mostly different combinations of ex-PVPs. DK_F118 x PHN46 was the highest yield entry but it also had high ear position and moisture, while PHMK0 x DK_HBA1 was the best overall entry. The entries in EX87 are mostly recently released ex-PVPs crossed to our testers, and the best performers included DK_84QAB1, NP901 and LH200.
- Approximately 350 breeding crosses were observed in Raleigh in the summer of 2017; results are presented in the breeding cross section, along with notes on some of the exotic sources used. Several of the most promising breeding crosses will be selfed in the 2018 summer nursery, including:

GEMN-0272/GEMN-0104	(89291/CML373):S(PHHB4)
GEMN-0272/GEMN-0287	CML343:S(GEMS-0032)GEMS-0227
GEMS-0243/GEMS-0256	CML287:S(GEMS-0227)PHP38
HB 83:N(LH82)	CML494:S(PHP38)LH193
HB 83:N(GEMN-0048)	

The Raleigh-GEM program has traditionally focused on 50% exotic breeding crosses and left the 25% exotic breeding crosses to the Ames program, but there are many exotic sources that cannot be effectively used at the 50% level even in Raleigh and so we are expanding our focus to look at 25% exotic breeding crosses for these accessions.

Allelic Diversity:

- There were 200 summer nursery rows dedicated to the development of F₁s and BC₁s for the Allelic Diversity project, and 44 rows were planted in Homestead, FL for the 2017 winter nursery
- Fourteen BC₁ families and three F₁s were completed this summer in Raleigh; Ten BC₁ families and six F₁s were also completed in the 2016 winter nursery.

Breeding crosses produced in summer 2017:

Pedigree	Notes
GEMS-0293/GEMS-0113	GEM x GEM
GEMS-0293/GEMS-0255	GEM x GEM
GEMS-0293/GEMS-0281	GEM x GEM
GEMS-0294/GEMS-0255	GEM x GEM
GEMS-0294/GEMS-0281	GEM x GEM
GEMS-0295/GEMS-0255	GEM x GEM
GEMS-0295/GEMS-0281	GEM x GEM
BR106:G39-012-002/GEMS-0113	GEM unreleased x GEM
BR106:G39-012-002/GEMS-0220	GEM unreleased x GEM
BR106:G39-012-002/GEMS-0237	GEM unreleased x GEM
BR106:G39-012-002/GEMS-0255	GEM unreleased x GEM
BR106:G39-012-002/GEMS-0281	GEM unreleased x GEM
CML343:S42-001-010/GEMS-0113	GEM unreleased x GEM
CML343:S42-001-010/GEMS-0255	GEM unreleased x GEM
GEMN-0292/GEMN-0104	GEM x GEM
GEMN-0292/GEMN-0135	GEM x GEM
GEMN-0292/GEMN-0272	GEM x GEM
GEMN-0292/GEMN-0287	GEM x GEM
Population 32:N(GEMN-0048)GEMN-0097	Population 32 = Eto blanco
Population 32:N(GEMN-0097)GEMN-0048	Population 32 = Eto blanco
Population 35:N(GEMN-0048)GEMN-0097	Population 32 = Mezcla
Population 35:N(GEMN-0097)GEMN-0048	Population 32 = Mezcla
Ecuador 904:N(GEMN-0097)GEMN-0048	Ecuador 904 = Cubano amarillo duro
Guatemala Group 21-18A:N(GEMN-0048)GEMN-0097	Guatemala Group 21-18A = Criollo
Guatemala Group 21-18A:N(GEMN-0097)GEMN-0048	Guatemala Group 21-18A = Criollo
Lima 13:N(GEMN-0097)GEMN-0048	Lima 13 = Perla
Ucayali 12:N(GEMN-0097)GEMN-0048	Ucayali 12 = Cubano amarillo duro
Valle 343:N(GEMN-0097)GEMN-0048	Valle 343 = Amarillo precoz
Venezuela 981:N(GEMN-0097)GEMN-0048	Venezuela 981 = Canilla

Germplasm to be crossed in winter 2017:

Pedigree	Pattern to be crossed	Notes
Guanajuato 28	SSS	Accession (Race Celaya)
Guanajuato 29	SSS	Accession (Race Celaya)
Guanajuato 69	SSS	Accession (Race Celaya)
Guanajuato 84	SSS	Accession (Race Celaya)
Jalisco 167B	SSS	Accession (Race Celaya)
Santander 349	SSS	Accession (Race Puya)
Chiapas 462	SSS	Accession (Race Tuxpeño)
Durango 159	SSS	Accession (Race Bolita)
Population 21	SSS	CIMMYT population (Tuxpeño)
Population 24	SSS	CIMMYT population (Tuxpeño)
H503	SSS	Rockefeller hybrid (Tuxpeño)
ICA V-156	SSS	Colombian synthetic (Tuxpeño)
HB 83 (M)	SSS	Male of hybrid HB83 (Tuxpeño)
DK_XL212	SSS	Semi-tropical Dekalb hybrid
INIA 160	SSS	Chilean hybrid
BR106:T33a	SSS	Brazilian synthetic x company 33 line a
BR106:T33b	SSS	Brazilian synthetic x company 33 line b
BR106:T33c	SSS	Brazilian synthetic x company 33 line c
BR106:T33d	SSS	Brazilian synthetic x company 33 line d
BR106:G39-012-002	SSS	GEM breeding line
BG070404:D27-018	SSS	GEM breeding line
BG070404:D27-043	SSS	GEM breeding line
(NC320/CML16)-02-SIB#2-01-01	SSS	NC State x CIMMYT derived line
(NC320/CML341)-03-SIB#2-01-01	SSS	NC State x CIMMYT derived line
GEMS-0032	SSS	GEM-Raleigh release
GEMS-0243	SSS	GEM-Raleigh release
CML178/PHP38	SSS	50% exotic breeding cross
CML287/NK_H8431	SSS	50% exotic breeding cross
CML287/PHEW7	SSS	50% exotic breeding cross
San Luis Potosi 146/PHP38	SSS	50% exotic breeding cross (SLP146 = Tuxpeño)
(CML343/NC320):S(GEMS-0255)	SSS	(NC State x CIMMYT) x GEM release
(CML373/NC320):S(GEMS-0255)	SSS	(NC State x CIMMYT) x GEM release
GEMS-0255/GEMS-0032	SSS	GEM x GEM breeding cross
GEMS-0243/GEMS-0255	SSS	GEM x GEM breeding cross
CML287/CML373	SSS	CML x CML
T4	SSS	Rockefeller inbred (Tuxpeño)
T5	SSS	Rockefeller inbred (Tuxpeño)
T6	SSS	Rockefeller inbred (Tuxpeño)
I137TN	SSS	South African inbred
D940Y	SSS	South African inbred
KO679Y	SSS	South African inbred
CL-02450	SSS	CIMMYT inbred

CML274	SSS	CIMMYT inbred
CML380	SSS	CIMMYT inbred
CML453	SSS	CIMMYT inbred
CML486	SSS	CIMMYT inbred
CML340	SSS	CIMMYT inbred
CML494	SSS	CIMMYT inbred
CML343	SSS	CIMMYT inbred
CML373	SSS	CIMMYT inbred
CML375	SSS	CIMMYT inbred
La Posta Seq C7 F71-1-1-1-2-B-B-B	SSS	CIMMYT inbred
SSS ex-PVPs to be used in crosses include LH193, LH200, LH204, PHHB4, PHHB9, PHMK0, PHP38 and PHW52. Only a small subset of all possible crosses between the exotics and temperates will be attempted.		

SSS ex-PVPs to be used in crosses include LH193, LH200, LH204, PHHB4, PHHB9, PHMK0, PHP38 and PHW52. Only a small subset of all possible crosses between the exotics and temperates will be attempted.

Pedigree	Pattern to be crossed	Notes
St. Croix Group 3	nSSS	Accession (Race Chandelle or St Croix)
Ecuador 904	nSSS	Accession (Race Cubano Amarillo Duro)
Lima 13	nSSS	Accession (Race Perla)
Ucayali 12	nSSS	Accession (Race Cubano Amarillo Duro)
Valle 343	nSSS	Accession (Race Amarillo Precoz)
Venezuela 981	nSSS	Accession (Race Canilla)
Guatemala Group 21-18A	nSSS	Accession (Race Criollo)
Chiapas 429	nSSS	Accession (Race Cuban Yellow Flint)
Barbados Group 2	nSSS	Accession (Race Coastal Tropical Flint)
BOZM 1168	nSSS	Bolivian breeding germplasm
PM-801	nSSS	Peruvian hybrid (Perla x Cuban Flint)
ICA V-106	nSSS	Colombian hybrid (Coastal Tropical Flint)
ICA H-154	nSSS	Colombian hybrid (Costeño)
HB83	nSSS	Tropical hybrid (CIMMYT derivatives)
TropHybDow17	nSSS	Tropical hybrid from Dow
Population 32	nSSS	CIMMYT population (Eto blanco)
Population 33 (IST) C2	nSSS	CIMMYT population (Subtropical yellow flint)
FL 4BT7	nSSS	Tester for FS8A(T)
((NC258/NC296)/NC300)	nSSS	Line derived from NC State inbreds
G17(C34)HS208-001-002-002-002-B	nSSS	CIMMYT derived line
Pool 33-128-001-001-B	nSSS	CIMMYT derived line
89343/LH82	nSSS	50% exotic breeding cross
89343/LH213	nSSS	50% exotic breeding cross
CML312/LH82	nSSS	50% exotic breeding cross
CML312/LH213	nSSS	50% exotic breeding cross
GEMN-0104	nSSS	GEM release
GEMN-0135	nSSS	GEM release
GEMN-0208	nSSS	GEM release
GEMN-0232	nSSS	GEM release
CML311	nSSS	CIMMYT inbred
CML312	nSSS	CIMMYT inbred
CML321	nSSS	CIMMYT inbred
CML323	nSSS	CIMMYT inbred
CML384	nSSS	CIMMYT inbred
CML422	nSSS	CIMMYT inbred
CML449	nSSS	CIMMYT inbred
CML451	nSSS	CIMMYT inbred
NEI 9004	nSSS	Thai inbred
NEI 9008	nSSS	Thai inbred
H101_F6S5	nSSS	Line derived from Rockefeller hybrid
M162W	nSSS	South African inbred

nSSS ex-PVPs to be used in crosses include DK_HBA1, LH82, LH185, LH216, and PHK56, as well as GEMN-0048. Only a small subset of all possible crosses between the exotics and temperates will be attempted.

GEM Releases

Table 11. 2018 Ames-GEM Germplasm Releases (7)

GEM Code	Pedigree	Race	Country	Type	Het. Group
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	Tuxpeño Argentino	Mexico Cuba	25% Exotic	SS
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	Tropical Hybrid Borer Composite	Mexico	25% Exotic	SS
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	Creole Tropical Inbred	Cuba Thailand	25% Exotic	SS
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	Tropical Hybrid Tropical Inbred	Mexico Nigeria	25% Exotic	SS
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	Suwan	Thailand	25% Exotic	SS
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	Suwan	Thailand	25% Exotic	SS
GEMN-0302	ATL100:N(LH82)(GEMN-0097)-041-001	Tropical Hybrid	Brazil	25% Exotic	NSS

Table 12. Ear and Grain Traits of the 2018 GEM-Ames Released Lines

GEM Code	Poll GDU	Cob Color	Grain color	Grain Texture
GEMS-0296	1310	Red	Yellow	Semi-Dent
GEMS-0297	1364	Red	Yellow	Semi-Dent
GEMS-0298	1338	Red	Yellow	Dent
GEMS-0299	1364	White	Yellow	Dent
GEMS-0300	1488	Seg R/W	Yellow	Semi-Flint
GEMS-0301	1437	Red	Yellow	Dent
GEMN-0302	1393	White	Yellow	Dent

Table 13. Topcross Maturity of 2017 Ames-GEM Germplasm Releases

Top Cross RM & Ear Height Estimates			
GEM Code	Pedigree	Average	
		Estimated RM	Ear Height (cm)
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	110	120
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	110	120
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	110	105
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	110	115
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	111	115
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	111	115
GEMS-0302	ATL100:N(LH82)(GEMN-0097)-041-001	108	120
	Hybrid Checks		
	MBS2655/MBS9508	~109-110	100
	MBS3520/MBS8814	~111	120
	34R65	~109	100
	33F85	~110	110
	31D58	~114	115

Table 14. NIR Trait Data of 2018 GEM-Ames Line Releases

Code	Pedigree	MOIST	Protein	Oil	Starch	Density
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	9.1	16.1	4.9	65.0	1.372
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	9.1	9.6	4.2	71.9	1.347
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	9.5	11.2	3.6	71.3	1.339
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	9.2	11.4	3.5	71.3	1.385
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	9.8	11.7	3.7	70.7	1.348
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	9.1	11.8	3.7	70.8	1.33
GEMS-0302	ATL100:N(LH82)(GEMN-0097)-041-001	8.6	11.6	4.1	70.2	1.357

Table 15. Disease and Nursery Observations of 2017 GEM-Ames Released Lines

GEM Code	Pedigree	Shed GDU	Silk GDU	Ames		Raleigh		Nurs Obs			Disease				Ear Notes	
				PHT	EHT	PHT	EHT	Unif at Flow	Stay Green	Field Score	GLS	NLB	SLB	FEM	Cob Color	K Row #
GEMS-0296	(GEMS-0113/GEMS-0162)-B-B-054-001	1310	1338	226	71	115	40	8	3	5	6.3	4	6.5	6.5	R	14
GEMS-0297	(GEMS-0115/GEMS-0222)-B-B-033-001	1364	1364	223	88	138	63	7	5+	8	6.5	NT	8	7	R	14
GEMS-0298	(GEMS-0219/GEMS-0227)-B-015-001	1338	1393	246	88	135	48	6	3-4	8	6.5	NT	8.3	5	R	18
GEMS-0299	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005-001	1364	1393	229	87	135	55	6	6+	6	6.8	4	7.5	7	W	16
GEMS-0300	NS1:S(GEMS-0149)41-051-001-001	1488	1488	212	99	100	45	7	6-	6	6.8	NT	8.3	6	R/W	16
GEMS-0301	NS1:S(GEMS-0149)41-066-001-001	1437	1488	230	88	110	45	7	8	8	7.3	3	8	6.5	R	16-18
GEMN-0302	ATL100:N(LH82)(GEMN-0097)-041-001	1393	1418	203	78	NT	NT	8		5	NT	NT	NT	NT	W	18
B73	Check	1418	1418	220	77	133	53	6	4	5	6	3	4.5	5	R	
Mo17	Check	1338	1418	232	90	98	38	8	4	4	5.5	3	8		R	
Oh43	Check	1281	1364	220	55			7	2	3					W	

Disease Rating Scale:

GLS, SLB - USDA-ARS Raleigh

NLB - PSR

FEM - DuPont/Pioneer

Nursery Obs Scores:

GLS (Gray Leaf Spot)

NLB (Northern Leaf Blight)

SLB (Southern Leaf Blight)

FEM (Fusarium Ear Mold)

1-9, 1 = worst, 9 = best

9 = Resistant, 1 = Susceptable

4 = Mod Resistant, 2 Mod Susceptable

9 = Resistant, 1 = Susceptable

9 = Resistant, 1 = Susceptable

Summary of Performance Data: GEMS-0296

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1614102	19	(GEMS-0113/GEMS-0162)-B-B-054/MBS9451	177.8	9.3	19.5	5.4	5.3		54.5	8.0	277	103	96.9
				Check Mean *	94.1%	9.3	20.2	1.8	2.4		54.8	8.4	267	110	89.0
6	2017	1764207	22	(GEMS-0113/GEMS-0162)-B-B-054/MBS8731	238.3	13.5	17.9	3.8	10.9	9	56.5	0.0	307	113	97.2
				Check Mean *	110.9%	11.9	18.4	3.3	2.3	9.0	56.3	2.4	294	114	95.6
6	2017	1764209	15	(GEMS-0113/GEMS-0162)-B-B-054/MBS9451	199.6	11.5	17.7	3.1	1.7	7	59.2	1.0	323	128	96.5
				Check Mean *	90.0%	12.5	18.1	3.7	0.3	8.0	58.8	1.4	287	105	94.6

Nursery Notes:

Average stalks, roots; Good grain quality and test weight;
Line has good disease ratings;
Flowers 3 days earlier than B73

* Yield expressed as % of Check Mean

GEMS-0113 is derived from CHIS775, a Tuxpeño line from Mexico
GEMS-0162 is derived from CUBA117, an Argentino line from Cuba



Summary of Performance Data: GEMS-0297

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1664101	28	(GEMS-0115/GEMS-0222)-B-B-033/MBS6403	192.5	12.6	15.4	0.9	11.0		55.0	6.0	268	95	85.8
				Check Mean *	95.1%	11.8	17.3	0.2	0.6		55.1	8.2	260	112	89.2
8	2017	1764206	7	(GEMS-0115/GEMS-0222)-B-B-033/MBS6403	193.9	11.9	16.5	4.8	3.0	7	58.2	0.0	285	108	91.2
				Check Mean *	86.8%	12.7	18.0	4.3	3.2	7.0	58.6	1.8	286	114	97.3
6	2017	1764207	8	(GEMS-0115/GEMS-0222)-B-B-033/MBS6858	215.1	12.1	18.2	3.8	10.5	5	56.7	0.0	290	127	100.0
				Check Mean *	100.1%	11.9	18.4	3.3	2.3	9.0	56.3	2.4	294	114	95.6
6	2017	1764207	30	(GEMS-0115/GEMS-0222)-B-B-033/MBS8731	220.2	13.2	17.1	4.3	0.8	9	57.0	2.0	300	122	98.1
				Check Mean *	102.5%	11.9	18.4	3.3	2.3	9.0	56.3	2.4	294	114	95.6

Nursery Notes:

Good stalks, roots; Excellent testweight; Good plant, ear height
Good late health; intact into late October; Good disease scores
Flowers 2 days earlier than B73

* Yield expressed as % of Check Mean

GEMS-0115 is derived from a tropical hybrid from Mexico

GEMS-0222 is derived from MBRC10, a multiple borer resistant composite from Mexico



Summary of Performance Data: GEMS-0298

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1664102	14	(GEMS-0219/GEMS-0227)-B-015/MBS6403	198.0	13.1	15.0	0.0	17.1		54.8	0.0	165	88	96.6
				Check Mean *	104.7%	10.8	17.5	0.0	15.5		56.3	11.0	258	101	86.1
8	2017	1764206	13	(GEMS-0219/GEMS-0227)-B-015/MBS6403	201.5	12.6	16.3	4.0	0.0	7	58.3	0.0	290	97	92.7
				Check Mean *	90.2%	12.7	18.0	4.3	3.2	7.0	58.6	1.8	286	114	93.7
6	2017	1764207	34	(GEMS-0219/GEMS-0227)-B-015/MBS8731	240.9	14.0	17.7	14.1	1.1	8	56.1	0.0	297	120	94.4
				Check Mean *	112.1%	11.9	18.4	3.3	2.3	9.0	56.3	2.4	294	114	95.6
6	2017	1764209	18	(GEMS-0219/GEMS-0227)-B-015/MBS9451	208.0	12.1	17.6	1.2	0.4	6	57.0	1.0	297	102	98.1
				Check Mean *	93.8%	12.5	18.1	3.7	0.3	8.0	58.8	1.4	287	105	94.6

Nursery Notes:

Good stalks, roots and testweight; ECB damage noted in nursery
 Good disease scores; Kernels have softer cap, square shape
 Flowers 3 days earlier than B73

* Yield expressed as % of Check Mean

GEMS-0219 is derived from CUBA164, a mixed (Creole) line from Cuba
 GEMS-0227 is derived from NEI9004, a tropical inbred from Thailand



Summary of Performance Data: GEMS-0299

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1664103	3	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS9508	186.0	10.7	17.5	7.3	52.0		55.4	9.0	275	123	91.8
				Check Mean *	101.3%	9.9	18.7	2.5	16.0		55.5	9.3	275	123	82.0
6	2017	1764208	2	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS8731	211.9	11.0	19.4	8.9	6.3	8	55.7	4.0	295	117	92.6
				Check Mean *	100.7%	10.9	19.6	4.3	2.9	8.0	57.6	5.3	298	114	100.9
6	2017	1764209	27	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS9451	207.3	12.3	17.2	0.9	2.9	6	54.9	0.0	293	110	94.2
				Check Mean *	93.5%	12.5	18.1	3.7	0.3	8.0	58.8	1.4	287	105	94.6
8	2017	1764211	12	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS9508	198.2	11.8	16.9	4.6	19.1	6	58.7	0.0	287	125	98.0
				Check Mean *	92.5%	11.9	18.4	4.6	2.2	8.0	58.3	5.0	274	106	93.6

Nursery Notes:

Good stalks, roots; good intactness late in season; moderate ear height;
Excellent grain quality; good staygreen, disease scores;
Flowers 2 days earlier than B73

* Yield expressed as % of Check Mean

GEMS-0115 is derived from a tropical hybrid from Mexico
Mp717 is a line from Mississippi State, developed for aflatoxin resistance
TZAR101 is a tropical inbred developed by IITA in Nigeria for aflatoxin resistance



Summary of Performance Data: GEMS-0300

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1613115	76	NS1:S(GEMS-0149)41-051-001/MBS9451	191.7	10.6	18.5	0.0	0.0		55.0		278	118	98.6
				Check Mean *	99.7%	10.4	18.7	0.1	0.8		55.5		271	113	93.5
6	2017	1764208	37	NS1:S(GEMS-0149)41-051-001/MBS8731	213.7	10.6	20.5	3.6	1.1	8	57.4	32.0	282	110	91.7
				Check Mean *	101.5%	10.9	19.6	4.3	2.9	8.0	57.6	5.3	298	114	91.8
7	2017	1764210	26	NS1:S(GEMS-0149)41-051-001/MBS9451	204.7	10.7	19.8	2.2	1.4	7	58.3	0.0	282	117	96.4
				Check Mean *	101.7%	10.7	19.8	9.6	0.0	7.0	58.2	1.2	284	108	95.3

Nursery Notes:

Good stalks, roots; solid testweight and grain quality; Excellent grain quality;
Good ear girth; moderate plant height, ear height; good disease scores
Flowers 3 days later than B73

* Yield expressed as % of Check Mean

GEMS-0149 is derived from UR05017, a Semidentado Riograndense line from Uruguay
NS1 is a Suwan line from Thailand



Summary of Performance Data: GEMS-0301

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1613115	76	NS1:S(GEMS-0149)41-066-001/MBS9451	192.5	10.6	18.1	0.0	0.0		54.5		267	113	100.3
				Check Mean *	100.1%	10.4	18.7	0.1	0.8		55.5		271	113	93.5
6	2017	1764208	40	NS1:S(GEMS-0149)41-066-001/MBS8731	202.3	10.5	19.7	9.5	8.0	0	56.8	22.0	303	107	93.1
				Check Mean *	96.1%	10.9	19.6	4.3	2.9	8.0	57.6	5.3	298	114	91.8
7	2017	1764210	26	NS1:S(GEMS-0149)41-066-001/MBS9451	194.3	10.3	19.5	3.0	0.0	5	56.7	1.0	293	120	96.4
				Check Mean *	96.5%	10.7	19.8	9.6	0.0	7.0	58.2	1.2	284	108	95.3

Nursery Notes:

Excellent stalks, roots, moderate plant, ear height;
Excellent late health; intact in late October; medium grain quality
Flowers 1 day later than B73

* Yield expressed as % of Check Mean

GEMS-0149 is derived from UR05017, a Semidentado Riograndense line from Uruguay
NS1 is a Suwan line from Thailand



Summary of Performance Data: GEMN-0302

# Reps	Year	Experiment	Entry	Pedigree	Yield (bu/a)	Y/M	% MST	% Stalk Lodging	% Root Lodging	Early Rt Rating	TWT	% Green Snap	Plant Height	Ear Height	% Stand Count
5	2016	1613101	39	ATL100:N(LH82)(GEMN-0097)-041/MBS2655	176.4	10.4	17.0	0.5	9.3		54.2	9.0	283	120	94.2
				Check Mean *	100.8%	9.7	18.1	1.0	7.3		55.2	13.9	274	113	90.8
4	2016	1613106	34	ATL100:N(LH82)(GEMN-0097)-041/MBS3520	170.7	9.6	17.9	0.8	9.4		54.7	8.0	277	123	92.0
				Check Mean *	88.0%	10.2	19.1	0.9	6.4		55.0	12.2	266	111	88.9
8	2017	1764201	13	ATL100:N(LH82)(GEMN-0097)-041/MBS2655	201.9	12.1	16.8	4.5	1.5	7	56.9	1.0	296	123	96.3
				Check Mean *	97.6%	11.5	18.2	5.3	3.8	7.0	57.9	5.4	288	113	96.0
8	2017	1764203	14	ATL100:N(LH82)(GEMN-0097)-041/MBS3520	198.4	11.6	17.7	4.1	1.5	4	56.2	1.0	300	123	93.2
				Check Mean *	87.4%	12.3	18.8	4.5	1.4	7.0	57.2	2.2	290	106	96.3

Nursery Notes:

Excellent stalk, roots; Moderate plant and ear height;
Early line with fast drydown in nursery; Medium grain quality
Flowering date same as B73

* Yield expressed as % of Check Mean

ATL100 is a tropical Brazilian hybrid
GEMN-0097 is derived from Florida synthetic FS8B



Racial Background of GEM Releases

Race	Ames Releases	NC Releases	Other Releases	Total Releases
Alazan	1	0	0	1
Argentino	6	0	0	6
Camelia	7	0	1	8
Canilla	0	0	0	0
Cateto	0	11	0	11
Cateto Sulino	4	0	0	4
Composite (Suwan)	10	1	0	11
Composite (Tuxpeño)	1	0	0	1
Corn Belt Dent	1	0	0	1
Criollo	1	1	0	2
Criollo/Argentino (CUBA164)	15	1	2	18
Criollo/Tuson (CUBA173)	1	0	0	1
Cristalino Colorado	16	0	2	18
Cuban yellow	7	2	0	9
Dent. Blanco Rugoso	3	0	3	6
Dentado Blanco	5	0	0	5
Dente Amarelo	8	3	1	12
Dente Branco	5	0	0	5
Early Caribbean	1	0	0	1
Hybrid Blanco	0	0	0	0
Hybrid-tropical	25	75	4	104
Mixed	12	2	4	18
GEM Derived	11	5	0	16
Multiple Borer Composite	1	0	0	1
Semidentado Riograndense	2	0	0	2
Southern Dent	0	0	0	0
St. Croix	1	1	1	3
Suwan	13	2	0	15
Tropical Line	4	5	0	9
Tusón	10	2	1	13
Tusón/Canilla	1	0	0	1
Tuxpeño	3	8	0	11
Tuxpeño/Olotillo	2	0	0	2
Unclassified	1	0	0	1
Totals	178	119	19	316

GEM Germplasm Releases						
Entry	Pedigree	Code	Race	Country	Site Released	Year Released
1	GEMS-001(PI503806xB94//B94)	GEMS-0001	Alazan	Peru	Ames	2001
2	GEMS-002 (FS8A(S):S09-43-2)	GEMS-0002	Mixed	USA	Ohio St.	2003
3	BR52051(SE32):S17-B-023-001-B-B	GEMS-0003	Dente Amarelo	Brazil	NC	2003
4	DK212T:S11-B-013-002-B-B	GEMS-0004	Hybrid Tropical	Thailand	NC	2003
5	DK212T:S11-B-015-001-B-B	GEMS-0005	Hybrid Tropical	Thailand	NC	2003
6	DK212T:S11-B-017-001-B-B	GEMS-0006	Hybrid Tropical	Thailand	NC	2003
7	DK212T:S11-B-018-001-B-B	GEMS-0007	Hybrid Tropical	Thailand	NC	2003
8	DK212T:S11-B-038-001-B-B	GEMS-0008	Hybrid Tropical	Thailand	NC	2003
9	DK212T:S11-B-040-001-B-B	GEMS-0009	Hybrid Tropical	Thailand	NC	2003
10	DK212T:S11-B-041-002-B-B	GEMS-0010	Hybrid Tropical	Thailand	NC	2003
11	DK212T:S11-B-045-002-B-B	GEMS-0011	Hybrid Tropical	Thailand	NC	2003
12	DK888:S11-B-003-001-B-B	GEMS-0012	Hybrid Tropical	Thailand	NC	2003
13	DK888:S11-B-004-004-B-B	GEMS-0013	Hybrid Tropical	Thailand	NC	2003
14	DK888:S11-B-010-001-B-B	GEMS-0014	Hybrid Tropical	Thailand	NC	2003
15	DK888:S11-B-014-001-B-B	GEMS-0015	Hybrid Tropical	Thailand	NC	2003
16	DK888:S11-B-015-003-B-B	GEMS-0016	Hybrid Tropical	Thailand	NC	2003
17	DK888:S11-B-025-001-B-B	GEMS-0017	Hybrid Tropical	Thailand	NC	2003
18	DK888:S11-B-026-002-B-B	GEMS-0018	Hybrid Tropical	Thailand	NC	2003
19	DK888:S11-B-029-001-B-B	GEMS-0019	Hybrid Tropical	Thailand	NC	2003
20	DK888:S11-B-033-001-B-B	GEMS-0020	Hybrid Tropical	Thailand	NC	2003
21	DK888:S11-B-035-002-B-B	GEMS-0021	Hybrid Tropical	Thailand	NC	2003
22	DK888:S11-B-035-003-B-B	GEMS-0022	Hybrid Tropical	Thailand	NC	2003
23	DK888:S11-B-039-002-B-B	GEMS-0023	Hybrid Tropical	Thailand	NC	2003
24	DKB830:S11-B-045-001-B-B	GEMS-0024	Hybrid Tropical	Mexico	NC	2003
25	DKXL370:S11-B-001-002-B-B	GEMS-0025	Hybrid Tropical	Brazil	NC	2003
26	DKXL370:S11-B-025-001-B-B	GEMS-0027	Hybrid Tropical	Brazil	NC	2003
27	DKXL370:S11-B-025-002-B-B	GEMS-0028	Hybrid Tropical	Brazil	NC	2003
28	DKXL370:S11-B-028-001-B-B	GEMS-0029	Hybrid Tropical	Brazil	NC	2003
29	DKXL380:S11-B-004-003-B-B	GEMS-0030	Hybrid Tropical	Brazil	NC	2003
30	DKXL380:S11-B-028-001-B-B	GEMS-0031	Hybrid Tropical	Brazil	NC	2003
31	DKXL380:S11-B-029-001-B-B	GEMS-0032	Hybrid Tropical	Brazil	NC	2003
32	BR51403(PE001):N16-B-044-B	GEMN-0033	Cateto	Brazil	NC	2003
33	BR51403(PE001):N16-B-172-B	GEMN-0035	Cateto	Brazil	NC	2003
34	BR51403(PE001):N16-B-176-B	GEMN-0036	Cateto	Brazil	NC	2003
35	BR51403(PE001):N16-B-181-B	GEMN-0037	Cateto	Brazil	NC	2003
36	BR51403(PE001):N16-B-239-B	GEMN-0039	Cateto	Brazil	NC	2003
37	BR51403(PE001):N16-B-431-B	GEMN-0040	Cateto	Brazil	NC	2003
38	BR51403(PE001):N16-B-521-B	GEMN-0041	Cateto	Brazil	NC	2003
39	BR51403(PE001):N16-B-705-B	GEMN-0042	Cateto	Brazil	NC	2003
40	BR51403(PE001):N16-B-857-B	GEMN-0043	Cateto	Brazil	NC	2003
41	CH05015:N12-20-1-B-B	GEMN-0044	Camelia	Chile	Ames	2003
42	CH05015:N12-140-1-B-B	GEMN-0045	Camelia	Chile	Ames	2003
43	CH05015:N15-8-1-B-B	GEMN-0046	Camelia	Chile	Ames	2003
44	UR13085:N0215-014-001	GEMN-0047	Cateto Sulino	Uruguay	Ames	2003
45	DKXL370:N11a20-31-1-B-B	GEMN-0048	Hybrid Tropical	Brazil	Ames	2003
46	DKB844:S1601-512-1-B	GEMS-0049	Hybrid Tropical	Mexico	Ames	2003
47	DKB844:S1601-517-1-B	GEMS-0050	Hybrid Tropical	Mexico	Ames	2003
48	CUBA164:S2008a-83-1-B	GEMS-0051	Mixed (Creole)	Cuba	Ames	2003
49	CUBA164:S2008a-326-1-B	GEMS-0052	Mixed (Creole)	Cuba	Ames	2003
50	CUBA164:S15-192-2-B	GEMS-0053	Mixed (Creole)	Cuba	Ames	2003
51	AR16035:S02-450-1-B	GEMS-0054	Cristalino Colorado	Argentina	Ames	2003
52	AR16035:S02-443-1-B-B	GEMS-0055	Cristalino Colorado	Argentina	Ames	2003
53	FS8B(T):N1809-946-1-B	GEMN-0056	Mixed	USA	Ames	2003
54	AR01150:N04-545-1-B	GEMN-0057	Dent. Blanco Rugoso	Argentina	Ames	2003
55	AR01150:N04-696-1-B	GEMN-0058	Dent. Blanco Rugoso	Argentina	Ames	2003
56	SCRO1:N1310-398-1-B	GEMN-0059	St. Croix	St. Croix	Ames	2003
57	CHIS775:N1912-519-1-B-B	GEMN-0060	Tuxpeño	Mexico	Ames	2003
58	AR16026:S17-10-1-B-B	GEMS-0061	Cristalino Colorado	Argentina	Ames	2003
59	AR16026:S17-16-1-B-B	GEMS-0062	Cristalino Colorado	Argentina	Ames	2003
60	CUBA164:S1511b-325-001	GEMS-0063	Mixed (Creole)	Cuba	Ames	2003
61	CUBA164:S1511b-249-1-B-B	GEMS-0064	Mixed (Creole)	Cuba	Ames	2003
62	CUBA117:S1520-41-1-B-B	GEMS-0065	Argentino	Cuba	Ames	2003
63	CUBA117:S1520-52-1-B-B	GEMS-0066	Argentino	Cuba	Ames	2003
64	GUAT209:S13 x (H99ae x OH43ae)-4-4-2-1	GEMS-0067	Tusón	Guatemala	Truman St	2007
65	AR16026:S1704-153-001	GEMS-0068	Cristalino Colorado	Argentina	Ames	2003

Entry	Pedigree	Code	Race	Country	Site Released	Year Released
66	AR16035:S19-161-001	GEMS-0069	Cristalino Colorado	Argentina	Ames	2003
67	CH05015:N12-183-001	GEMN-0070	Camelia	Chile	Ames	2003
68	CH05015:N15-003-001	GEMN-0071	Camelia	Chile	Ames	2003
69	CHIS775:S1911b-439-001	GEMS-0072	Tuxpeño	Mexico	Ames	2003
70	CUBA117:S15-372-001	GEMS-0073	Argentino	Cuba	Ames	2003
71	CUBA164:S1517-163-001	GEMS-0074	Mixed (Creole)	Cuba	Ames	2003
72	CUBA164:S1517-241-002	GEMS-0075	Mixed (Creole)	Cuba	Ames	2003
73	DKB844:N11b-118-001	GEMN-0076	Hybrid Tropical	Mexico	Ames	2003
74	DKXL370:N11a20-604-001	GEMN-0077	Hybrid Tropical	Brazil	Ames	2003
75	FS8A(S):S09-362-001	GEMS-0078	Mixed	USA	Ames	2003
76	FS8B(S):S0316-802-001	GEMS-0079	Mixed	USA	Ames	2003
77	FS8B(S):S0316-814-001	GEMS-0080	Mixed	USA	Ames	2003
78	FS8B(T):N1802-382-001	GEMN-0081	Mixed	USA	Ames	2003
79	FS8B(T):N1802-525-001	GEMN-0082	Mixed	USA	Ames	2003
80	GUAT209:N1925-081-001	GEMN-0083	Tusón	Guatemala	Ames	2003
81	PASCO14:S0105-198-001	GEMS-0084	Cuban yellow	Peru	Ames	2003
82	UR01089:S0525-519-001	GEMS-0085	Cateto Sulino	Uruguay	Ames	2003
83	UR10001:S1813-257-001	GEMS-0086	Dente Branco	Uruguay	Ames	2003
84	AR03056:N09-024-001	GEMN-0087	Dentado Blanco	Argentina	Ames	2004
85	AR03056:N09-182-001	GEMN-0088	Dentado Blanco	Argentina	Ames	2004
86	AR03056:N09-191-001	GEMN-0089	Dentado Blanco	Argentina	Ames	2004
87	AR03056:N09-250-001	GEMN-0090	Dentado Blanco	Argentina	Ames	2004
88	CHIS740:S1411a-783-002	GEMS-0091	Tuxpeño/Olotillo	Mexico	Ames	2004
89	CUBA164:S2012-444-001	GEMS-0092	Mixed (Creole)	Cuba	Ames	2004
90	CUBA164:S2012-966-001	GEMS-0093	Mixed (Creole)	Cuba	Ames	2004
91	DKXL370:N11a20-199-002	GEMN-0094	Hybrid Tropical	Brazil	Ames	2004
92	DKXL370:N11a20-234-002	GEMN-0095	Hybrid Tropical	Brazil	Ames	2004
93	DKXL370:N11a20-322-001	GEMN-0096	Hybrid Tropical	Brazil	Ames	2004
94	FS8B(T):N11a-087-001	GEMN-0097	Mixed	USA	Ames	2004
95	FS8B(T):N11a-110-001	GEMN-0098	Mixed	USA	Ames	2004
96	FS8B(T):N11a-322-001	GEMN-0099	Mixed	USA	Ames	2004
97	UR11003:S0302-937-001	GEMS-0100	Dente Branco	Uruguay	Ames	2004
98	DK212T:S11b-007-B-B	GEMS-0101	Hybrid Tropical	Thailand	NC	2004
99	DK888:S11b-001-B	GEMS-0102	Hybrid Tropical	Thailand	NC	2004
100	DK888:N11(95)-B-027-010-B-B	GEMN-0103	Hybrid Tropical	Thailand	NC	2004
101	DK888:N11(95)-B-027-012-B-B	GEMN-0104	Hybrid Tropical	Thailand	NC	2004
102	DK888:N11(95)-B-027-015-B-B	GEMN-0105	Hybrid Tropical	Thailand	NC	2004
103	DK888:N11(95)-B-022-007-B-B	GEMN-0106	Hybrid Tropical	Thailand	NC	2004
104	DK888:N11(95)-B-022-012-B-B	GEMN-0107	Hybrid Tropical	Thailand	NC	2004
105	DK888:N11(95)-B-027-001-B-B	GEMN-0108	Hybrid Tropical	Thailand	NC	2004
106	DKXL380:N11-B-015-003-B-B	GEMN-0109	Hybrid Tropical	Brazil	NC	2004
107	BARBGP2:N08a18-332-001	GEMN-0110	Tusón	Barbados	Ames	2005
108	CH05015:N1204-057-001	GEMN-0111	Camelia	Chile	Ames	2005
109	CH05015:N1502-086-001	GEMN-0112	Camelia	Chile	Ames	2005
110	CHIS775:S1911b-120-001	GEMS-0113	Tuxpeño	Mexico	Ames	2005
111	DK212T:N11a12-191-001	GEMN-0114	Hybrid Tropical	Thailand	Ames	2005
112	DKB844:S1601-073-001	GEMS-0115	Hybrid Tropical	Mexico	Ames	2005
113	DKB844:S1601-003-002	GEMS-0116	Hybrid Tropical	Mexico	Ames	2005
114	DREP150:N2011d-624-001	GEMN-0117	Mixed	Dom. Republic	Ames	2005
115	UR11003:S0302-1011-001	GEMS-0118	Dente Branco	Uruguay	Ames	2005
116	CHS775:N19-042-001-B	GEMN-0119	Tuxpeño	Mexico	NC	2005
117	CHS775:N19-042-003-B	GEMN-0120	Tuxpeño	Mexico	NC	2005
118	CHS775:N19-027-010-B	GEMN-0121	Tuxpeño	Mexico	NC	2005
119	CHS775:N19-093-002-B	GEMN-0122	Tuxpeño	Mexico	NC	2005
120	CHS775:N19-030-011-B	GEMN-0123	Tuxpeño	Mexico	NC	2005
121	DK212T:N11-B-003-001-B	GEMN-0124	Hybrid Tropical	Thailand	NC	2005
122	DK888:S11-B-029-001-B	GEMS-0125	Hybrid Tropical	Thailand	NC	2005
123	DK888:S11-B-029-006-B	GEMS-0126	Hybrid Tropical	Thailand	NC	2005
124	DK888:N11(95)-B-017-001-B	GEMN-0127	Hybrid Tropical	Thailand	NC	2005
125	DKXL370:N11-B-005-002-B	GEMN-0128	Hybrid Tropical	Brazil	NC	2005
126	DKXL370:N11-B-005-006-B	GEMN-0129	Hybrid Tropical	Brazil	NC	2005
127	DKXL370:N11-B-005-010-B	GEMN-0130	Hybrid Tropical	Brazil	NC	2005
128	DKXL370:N11-B-005-011-B	GEMN-0131	Hybrid Tropical	Brazil	NC	2005
129	DKXL370:N11-B-005-021-B	GEMN-0132	Hybrid Tropical	Brazil	NC	2005
130	DKXL370:N11-B-029-002-B	GEMN-0133	Hybrid Tropical	Brazil	NC	2005

Entry	Pedigree	Code	Race	Country	Site Released	Year Released
131	DKXL380:N11-B-010-017-B	GEMN-0134	Hybrid Tropical	Brazil	NC	2005
132	DKXL380:N11-B-007-025-B	GEMN-0135	Hybrid Tropical	Brazil	NC	2005
133	DKXL380:N11-B-007-028-B	GEMN-0136	Hybrid Tropical	Brazil	NC	2005
134	SCR Gp3:N14-028-003-003-B	GEMN-0137	Tusón	St. Croix	NC	2005
135	AR17056:N2035-421-001	GEMN-0138	Cristalino Colorado	Argentina	Ames	2006
136	AR17056:N2035-473-001	GEMN-0139	Cristalino Colorado	Argentina	Ames	2006
137	BR51675:N0620-033-001	GEMN-0140	Dente Amarelo	Brazil	Ames	2006
138	BR51675:N0620-053-001	GEMN-0141	Dente Amarelo	Brazil	Ames	2006
139	BR52060:S0210-143-001	GEMS-0142	Dente Amarelo	Brazil	Ames	2006
140	BR52060:S0210-147-001	GEMS-0143	Dente Amarelo	Brazil	Ames	2006
141	MDI022:N2120-284-001	GEMN-0144	Cuban yellow	Peru	Ames	2006
142	MDI022:N2120-333-001	GEMN-0145	Cuban yellow	Peru	Ames	2006
143	NEI9004:S2818-003-001	GEMS-0146	Inbred Tropical	Thailand	Ames	2006
144	NEI9004:S2818-025-001	GEMS-0147	Inbred Tropical	Thailand	Ames	2006
145	NEI9004:S2818-376-001	GEMS-0148	Inbred Tropical	Thailand	Ames	2006
146	UR05017:S0415-180-002	GEMS-0149	Semidentado Riograndense	Uruguay	Ames	2006
147	UR05017:S0415-187-001	GEMS-0150	Semidentado Riograndense	Uruguay	Ames	2006
148	CHIS775:N19-042-001-003-B-B-B-B	GEMN-0151	Tuxpeño	Mexico	NC	2006
149	DK212T:N11-B-016-005-B-B-B	GEMN-0152	Hybrid Tropical	Thailand	NC	2006
150	DKXL380:N11-B-007-027-B-B-B-B	GEMN-0153	Hybrid Tropical	Brazil	NC	2006
151	AR13026:N08b15-016	GEMN-0154	Cristalino Colorado	Argentina	Ames	2007
152	AR13026:N08b15-086	GEMN-0155	Cristalino Colorado	Argentina	Ames	2007
153	BR51721:N2012-098-002	GEMN-0156	Dente Amarelo	Brazil	Ames	2007
154	BR51721:N2012-164-002	GEMN-0157	Dente Amarelo	Brazil	Ames	2007
155	BR51721:N2012-397-001	GEMN-0158	Dente Amarelo	Brazil	Ames	2007
156	CASH:N1410-018-001	GEMN-0159	Corn Belt Dent	USA	Ames	2007
157	CUBA117:S1542-037-002	GEMS-0160	Argentino	Cuba	Ames	2007
158	CUBA117:S1542-057-001	GEMS-0161	Argentino	Cuba	Ames	2007
159	CUBA117:S1542-057-002	GEMS-0162	Argentino	Cuba	Ames	2007
160	CUBA164:S2012-456-001	GEMS-0163	Mixed (Creole)	Cuba	Ames	2007
161	DK212T:N11-B-003-022-B-B-B	GEMN-0164	Hybrid Tropical	Thailand	NC	2007
162	DK888:N11(95)-B-022-012-026-B-B	GEMN-0165	Hybrid Tropical	Thailand	NC	2007
163	DK888:N11(95)-B-027-001-008-B-B	GEMN-0166	Hybrid Tropical	Thailand	NC	2007
164	DK888:N11(95)-B-027-001-018-B-B	GEMN-0167	Hybrid Tropical	Thailand	NC	2007
165	DK888:N11(95)-B-027-001-019-B	GEMN-0168	Hybrid Tropical	Thailand	NC	2007
166	DK888:N11(95)-B-027-001-027-B	GEMN-0169	Hybrid Tropical	Thailand	NC	2007
167	DK888:N11(95)-B-027-001-030-B	GEMN-0170	Hybrid Tropical	Thailand	NC	2007
168	DK888:N11(95)-B-027-001-037-B	GEMN-0171	Hybrid Tropical	Thailand	NC	2007
169	DK888:N11(95)-B-027-001-040-B	GEMN-0172	Hybrid Tropical	Thailand	NC	2007
170	DK888:N11(95)-B-027-012-009-B	GEMN-0173	Hybrid Tropical	Thailand	NC	2007
171	AR17056:N2025-574-001	GEMN-0174	Cristalino Colorado	Argentina	Ames	2008
172	BVIR155:S2012-029-001	GEMS-0175	Tusón	British Virgin Is.	Ames	2008
173	CUBA164:S2008c-289-001	GEMS-0176	Mixed (Creole)	Cuba	Ames	2008
174	DK888:N11a08a-395-001	GEMN-0177	Hybrid Tropical	Thailand	Ames	2008
175	DK888:N11a08a-440-001	GEMN-0178	Hybrid Tropical	Thailand	Ames	2008
176	FS8B(T):N11a08c-030-002	GEMN-0179	Mixed	USA	Ames	2008
177	GUAT209:S1308a-047-001	GEMS-0180	Tusón	Guatemala	Ames	2008
178	GUAT209:S1308a-068-001	GEMS-0181	Tusón	Guatemala	Ames	2008
179	GUAT209:S1308a-084-001	GEMS-0182	Tusón	Guatemala	Ames	2008
180	GUAT209:S1308a-104-001	GEMS-0183	Tusón	Guatemala	Ames	2008
181	GUAT209:S1308a-120-001	GEMS-0184	Tusón	Guatemala	Ames	2008
182	CUBA164:S2012-966-001-B wx	GEMS-0185	Mixed (Creole)	Cuba	Ames	2008
183	DKXL370:N11a20-036-002-B wx	GEMN-0186	Hybrid Tropical	Brazil	Ames	2008
184	ANTIG03:N1218-056-001	GEMN-0187	Criollo	Antigua	Ames	2009
185	DKXL212:S0912-012-001	GEMS-0188	Hybrid Tropical	Brazil	Ames	2009
186	DKXL212:S0912-117-001	GEMS-0189	Hybrid Tropical	Brazil	Ames	2009
187	PASCO14:N0424-078-001	GEMN-0190	Cuban yellow	Peru	Ames	2009
188	SCROGP3:N2017-003-001	GEMN-0191	Tusón	St. Croix	Ames	2009
189	SCROGP3:N2017-172-001	GEMN-0192	Tusón	St. Croix	Ames	2009
190	UR11002:N0308b-086-001	GEMN-0193	Dente Branco	Uruguay	Ames	2009
191	DK888:N11(95)-B-027-001-011-B	GEMN-0194	Hybrid Tropical	Thailand	NC	2009
192	DK888:N11(95)-B-027-001-015-B	GEMN-0195	Hybrid Tropical	Thailand	NC	2009
193	DK888:N11(95)-B-003-001-001-B	GEMN-0196	Hybrid Tropical	Thailand	NC	2009
194	DK888:N11(95)-002-021-008-B-B	GEMN-0197	Hybrid Tropical	Thailand	NC	2009
195	DK212T:N11-040-001-007	GEMN-0198	Hybrid Tropical	Thailand	NC	2009

Entry	Pedigree	Code	Race	Country	Site Released	Year Released
196	AR16021:S0908a-039-001	GEMS-0199	Cristalino Colorado	Argentina	Ames	2010
197	BR105:S1612-008-001	GEMS-0200	Composite (Suwan)	Brazil	Ames	2010
198	BR105:S1612-057-001	GEMS-0201	Composite (Suwan)	Brazil	Ames	2010
199	BR105:S1640-128-001	GEMS-0202	Composite (Suwan)	Brazil	Ames	2010
200	CUBA164:S2008dF44-012-001	GEMS-0203	Mixed (Creole)	Cuba	Ames	2010
201	FS8A(T):N1804-006-001	GEMN-0204	Mixed	USA	Ames	2010
202	GUAD05:N3215-197-001	GEMN-0205	Early Caribbean	Guadalupe	Ames	2010
203	AR16035:S02-615-001-B wx BR51403(PE001):N16-B-044-004-001-001C-001	GEMS-0206	Cristalino Colorado	Argentina	Ames	2010
204	BR51403(PE001):N16-B-044-004-001-002G-003	GEMN-0207	Cateto	Brazil	NC	2010
205		GEMN-0208	Cateto	Brazil	NC	2010
206	BR51721(RN07):N20-B-017-002	GEMN-0209	Dente Amarelo	Brazil	NC	2010
207	CL-G1607(CML420):N11-008-001-007	GEMN-0210	CML tropical inbred	Mexico	NC	2010
208	DK888:N11-B-027-012-B-007	GEMN-0212	Hybrid Tropical	Thailand	NC	2010
209	DKXL380:N11-B-007-010-B-002	GEMN-0213	Hybrid Tropical	Brazil	NC	2010
210	MDI022:N21-B-002-003	GEMN-0214	Cuban yellow	Peru	NC	2010
211	NS1:S08-006-001-002	GEMS-0215	Inbred Tropical	Thailand	NC	2010
212	PASCO14:N11b-B-001-002	GEMN-0216	Cuban Yellow	Peru	NC	2010
213	DK888:N11-B-027-001-B-001	GEMN-0217	Hybrid Tropical	Thailand	NC	2010
214	(CUBA164:S2012-459-001-B/GEMS-0002)-B-B-011	GEMS-0218	GEM x GEM derived	USA	Ames	2011
215	(CUBA164:S2012-459-001-B/GEMS-0002)-B-B-031	GEMS-0219	GEM x GEM derived	USA	Ames	2011
216	(GEMS-0113/GEMS-0091)-B-058-001	GEMS-0220	GEM x GEM derived	USA	Ames	2011
217	BR105:N1641-159-001	GEMN-0221	Composite (Suwan)	Brazil	Ames	2011
218	MBRC10:S1741-B-057	GEMS-0222	Multiple Borer Composite	Mexico	Ames	2011
219	CUBA164:S2012-444-001-B wx	GEMS-0223	Mixed (Creole)	Cuba	Ames	2011
220	BG070404:D27S42-B-014	GEMS-0224	Unclassified	Venezuela	Ames	2012
221	BR105:N16a16b-B-074	GEMN-0225	Composite (Suwan)	Brazil	Ames	2012
222	BR106:S(LH132)(PHG39)-B-053	GEMS-0226	Composite (Tuxpeño)	Brazil	Ames	2012
223	NEI9004:S2809-B-022	GEMS-0227	Inbred Tropical	Thailand	Ames	2012
224	NEI9004:S2809-B-025	GEMS-0228	Inbred Tropical	Thailand	Ames	2012
225	SANM126:N12(LH123)-B-033	GEMN-0229	Cuban yellow	Peru	Ames	2012
226	CML413:N18-001-036-002	GEMN-0230	CML tropical inbred	Mexico	NC	2012
227	CUBA164:D27-B-017-001	GEMN-0231	Mixed (Creole)	Cuba	NC	2012
228	SCR_Gp3:N14-028-003-B-002	GEMN-0232	Tusón	St. Croix	NC	2012
229	CML329:N18-001-020-001	GEMN-0233	CML tropical inbred	Mexico	NC	2012
230	AR17026:S1648-B-030	GEMS-0234	Cristalino Colorado	Argentina	Ames	2013
231	CUBA173:S0446-B-030	GEMS-0235	Criollo/Tusón	Cuba	Ames	2013
232	DK212T:N11a10-B-110	GEMN-0236	Hybrid Tropical	Thailand	Ames	2013
233	DKXL370:S08c17c-B-008	GEMS-0237	Hybrid Tropical	Brazil	Ames	2013
234	NEI9004:N0803-B-027	GEMN-0238	Inbred Tropical	Thailand	Ames	2013
235	NEI9004:N0803-B-053	GEMN-0239	Inbred Tropical	Thailand	Ames	2013
236	UR13085:S(N28)(CUBA117:S1520-156-1-B-B)-B-023	GEMS-0240	Cateto Sulino	Uruguay	Ames	2013
237	UR13085:S(N28)(CUBA117:S1520-156-1-B-B)-B-058	GEMS-0241	Cateto Sulino	Uruguay	Ames	2013
238	SE32(BR52051):N11c-015-004-B	GEMN-0242	Dente Amarelo	Brazil	NC	2013
239	CML287:S15-024-003-B	GEMS-0243	CML tropical inbred	Mexico	NC	2013
240	CML287:S15-027-001-B	GEMS-0244	CML tropical inbred	Mexico	NC	2013
241	DK888:S11b-037-018-008-B	GEMS-0245	Hybrid Tropical	Thailand	NC	2013
242	AR01150:N0402-B-026	GEMN-0246	Dentado Blanco Rugoso	Argentina	Ames	2014
243	AR03056:N0902-064-001-B-B	GEMN-0247	Dentado Blanco	Argentina	Ames	2014
244	AR16042:S2028-B-012-B-B	GEMS-0248	Cristalino Colorado	Argentina	Ames	2014
245	BR105:N1643-B-020-B-B	GEMN-0249	Composite (Suwan)	Brazil	Ames	2014
246	CL-G1703:S17c43-B-023-B-B	GEMS-0250	Tropical Line	CIMMYT	Ames	2014
247	CL-G1703:S17c43-B-026-B-B	GEMS-0251	Tropical Line	CIMMYT	Ames	2014
248	DKB844:N11b18-241-001-B-B	GEMN-0252	Hybrid Tropical	Mexico	Ames	2014
249	DK212T:S0640-034-002	GEMS-0253	Hybrid Tropical	Thailand	NC	2015
250	FS8B(T):N11a-225-002	GEMN-0254	Mixed	USA	NC	2015
251	FS8B(S):S03-133-002	GEMS-0255	Mixed	USA	NC	2015
252	NS1:S0834-006-002	GEMS-0256	Suwan	Thailand	NC	2015
253	CHIS462:N08d-013-001	GEMN-0257	Tuxpeño	Mexico	NC	2015
254	DKB830:S19-009-004	GEMS-0258	Hybrid Tropical	Mexico	NC	2015
255	SCR01:N11c-015-002	GEMN-0259	St. Croix	St. Croix	NC	2015

Entry	Pedigree	Code	Race	Country	Site Released	Year Released
256	(GEMN-0140/GEMN-0097)-B-B-026-B-B	GEMN-0260	GEM x GEM derived	USA	Ames	2015
257	(GEMN-0140/GEMN-0097)-B-B-027-B-B	GEMN-0261	GEM x GEM derived	USA	Ames	2015
258	(GEMS-0147/GEMS-0180)-B-104-001-B-B	GEMS-0262	GEM x GEM derived	USA	Ames	2015
259	BR105:S1626(GEMS-0175)-B-049-B-B	GEMS-0263	Composite Suwan/Tusón	Brazil/BVIR	Ames	2015
260	BR105:S1643-078-001-B-B	GEMS-0264	Composite Suwan	Brazil	Ames	2015
261	DKXL212:S0950-B-083-B-B	GEMS-0265	Hybrid Tropical	Brazil	Ames	2015
262	NEI9008:N0826(GEMN-0155)-B-074-B-B	GEMN-0266	Suwan/Cristalino Colorado	Thailand/Argentina	Ames	2015
263	NEI9008:N0826(GEMN-0155)-B-095-B-B	GEMN-0267	Suwan/Cristalino Colorado	Thailand/Argentina	Ames	2015
264	NS1:S0852-B-021-B-B	GEMS-0268	Suwan	Thailand	Ames	2015
265	NS1:S0852-B-054-B-B	GEMS-0269	Suwan	Thailand	Ames	2015
266	ANTIG01:N16-050-002	GEMN-0270	Criollo	Antigua	NC	2016
267	BR105:N16-043-001	GEMN-0271	Composite (Suwan)	Brazil	NC	2016
268	(GEMN-0043xGEMN-0097)-B-001	GEMN-0272	GEM x GEM derived	USA	NC	2016
269	(GEMS-0032xGEMS-0050)-B-007	GEMS-0273	GEM x GEM derived	USA	NC	2016
270	(GEMS-0032xGEMS-0113)-B-004	GEMS-0274	GEM x GEM derived	USA	NC	2016
(KO679Y/GEMS-0115)/GEMS-0162)-008-						
271	001	GEMS-0275	Hybrid Tropical	S. Africa/Mexico	Ames	2016
272	(53SS4/GEMS-0026)-SIB-B-003	GEMS-0276	Hybrid Tropical	Brazil	Ames	2016
273	(53SS4/GEMS-0031)-SIB-B-039	GEMS-0277	Hybrid Tropical	Brazil	Ames	2016
274	(GEMS-0115/S49w)-B-B-036	GEMS-0278	Hybrid Tropical	Mexico	Ames	2016
275	(GEMS-0176/S49w)-B-B-028	GEMS-0279	Mixed (Creole)	Cuba	Ames	2016
276	BR52051:S172641-B-018	GEMS-0280	Dente Amarelo	Brazil	Ames	2016
277	BR52051:S172641-B-054	GEMS-0281	Dente Amarelo	Brazil	Ames	2016
278	CHIS740:S(PHW17)(87916W)-126-001	GEMS-0282	Tuxpeno/Olotillo	Chile	Ames	2016
279	UR11002:S1409-068-001	GEMS-0283	Dente Branco	Uruguay	Ames	2016
280	AR17056:S1217-B-025	GEMS-0284	Cristalino Colorado	Argentina	Ames	2016
(GEMN-0117/DKXL212:N11a-139-001-001-B-						
281	B-B-B-B)-B-B-019	GEMN-0285	Tusón/Canilla	Dom. Republic	Ames	2016
282	MDI022:N(PHG35)(GEMN-0097)-072-001	GEMN-0286	Cuban yellow	Peru	Ames	2016
283	(GEMN-0108xGEMN-0178)-B-004	GEMN-0287	GEM x GEM derived	USA	NC	2016
284	(GEMS-0147/GEMS-0115)-B-002-001-001-B	GEMS-0288	GEM recycle	USA	Ames	2017
285	(GEMS-0147/GEMS-0180)-B-033-001-001-B	GEMS-0289	GEM recycle	USA	Ames	2017
286	BR52051:S172641-B-050-001-B	GEMS-0290	Dente Amarelo	Brazil	Ames	2017
287	Ki21:S(DJ7)(GEMS-0115)-B-051-002-B	GEMS-0291	Tropical Inbred x GEM	Thailand	Ames	2017
288	(GEMN-0097/GEMN-0136)-B-008	GEMN-0292	GEM x GEM derived	USA	NC	2017
289	CML341:S42-B-124	GEMS-0293	Tuxpeño	Mexico	NC	2017
290	DKB844:S16-005-022-012	GEMS-0294	Hybrid Tropical	Mexico	NC	2017
291	DKB830:S51-031-003	GEMS-0295	Hybrid Tropical	Mexico	NC	2017
292	(GEMS-0113/GEMS-0162)-B-B-054-001	GEMS-0296	GEM recycle	USA	Ames	2018
293	(GEMS-0115/GEMS-0222)-B-B-033-001	GEMS-0297	GEM recycle	USA	Ames	2018
294	(GEMS-0219/GEMS-0227)-B-015-001	GEMS-0298	GEM recycle	USA	Ames	2018
(H8431/((GEMS-0115/Mp717)/TZAR101))-						
295	SIB-B-005-001	GEMS-0299	Inbred	Mexico/Nigeria	Ames	2018
296	NS1:S(GEMS-0149)41-051-001-001	GEMS-0300	Suwan	Thailand	Ames	2018
297	NS1:S(GEMS-0149)41-066-001-001	GEMS-0301	Suwan	Thailand	Ames	2018
298	ATL100:N(LH82)(GEMN-0097)-041-001	GEMN-0302	Tropical Hybrid	Brazil	Ames	2018
1	DKXL212:N11a-139-001-001	DE EXP	Hybrid Tropical	Brazil	UDEL	2003
2	DE3 (DKXL212:N11a-191)	DE3	Hybrid Tropical	Brazil	UDEL	2002
3	DE4 (DKXL212:N11a-365)	DE4	Hybrid Tropical	Brazil	UDEL	2002
4	DE6 (DKXL212:N11a-234)	DE6	Hybrid Tropical	Brazil	UDEL	2005
5	NY212 (FS8B(T):N1802-212)	NY212	Mixed	USA	Cornell U	2009
6	NY215 (FS8B(T):N1802-215)	NY215	Mixed	USA	Cornell U	2009
7	NY266 (AR01150:N0406-266)	NY266	Dent. Blanco Rugoso	Argentina	Cornell U	2009
8	Tx204 (AR01150:N0406)	Tx204	Dent. Blanco Rugoso	Argentina	Texas A&M	2004
9	Tx205 (AR01150:N0406)	Tx205	Dent. Blanco Rugoso	Argentina	Texas A&M	2004
10	W605S (AR17026:N1019)	W605S	Cristalino Colorado	Argentina	U of Wisc.	2004
11	W606S (SCRO1:N1310)	W606S	St. Croix	St. Croix	U of Wisc.	2009
12	W607S (BR52051:N04)	W607S	Dente Amarelo	Brazil	U of Wisc.	2009
13	W608S (CH05015:N15)	W608S	Camelia	Chile	U of Wisc.	2009
14	W609S (FS8B(T):N11a)	W609S	Mixed	USA	U of Wisc.	2009
15	W610S (CUBA164:S2012)	W610S	Mixed (Creole)	Cuba	U of Wisc.	2009
16	W615S (GEM Quality Syn. GQS C0)	W615S	Criollo/Argentino	Cuba	U of Wisc.	2013
17	W616S (AR16026:S1719)	W616S	Cristalino Colorado	Argentina	U of Wisc.	2013

Bolded codes are Crop Science Registered

Yield Trials

**2017 GEM Raleigh Yield Trial Data (All
Entries Ranked) Experiment 81**

		<i>All location Means</i>						<i>Percentage</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Moist</i>	<i>Yield/M oist</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
15	P1794VYHR	159	108	17.3	9.2	290	110	1.0	0.0	99
14	P2088R	154	105	18.5	8.3	288	102	1.0	0.0	99
16	P1637R	148	101	17.3	8.6	294	107	0.0	0.0	100
3	DKF118 x PHK46	146	99	19.0	7.7	308	128	3.0	3.0	95
17	NC320xNC368 x NC476xP3737.NC492BC	143	97	18.0	7.9	312	131	4.0	2.0	95
7	PHMK0 x DKHBA1	141	96	16.9	8.3	292	115	2.0	3.0	96
13	P1197R	140	95	15.8	8.9	252	90	0.0	0.0	100
12	PHR03 x NC476	139	95	17.7	7.9	271	115	3.0	1.0	96
18	NC320xNC368 x DKHBA1.PHN47F1	138	94	17.6	7.8	307	123	2.0	2.0	95
5	LH132 x PHK46	137	93	17.8	7.7	288	116	1.0	1.0	98
8	PHMK0 x LH211	137	93	17.3	7.9	297	119	1.0	0.0	99
20	DKC68-04	135	92	17.7	7.6	260	97	2.0	0.0	99
6	NS701 x PHK46	133	90	15.7	8.5	285	122	2.0	1.0	98
9	PHK46 x PHMK0	133	90	17.2	7.7	292	119	0.0	2.0	96
1	PHK46 x DK2FADB	132	90	16.7	7.9	273	105	2.0	1.0	98
4	LH132 x DKMM402A	132	90	16.0	8.3	283	100	2.0	0.0	98
19	DKHBA1.NC476xNC368.NC320	132	90	17.2	7.7	294	127	4.0	1.0	95
10	PHJ65 x NC476	131	89	17.5	7.5	290	123	3.0	1.0	96
11	NC476 x PHG84	130	88	17.7	7.3	275	112	1.0	0.0	99
2	DKF118 x DKHBA1	129	88	19.2	6.7	295	116	2.0	1.0	97
	Replications	10		10	10	10	10	10	10	10
	Test Entry Means	135	92	17.4	7.8	287	116	2	1	97
	Check Means	147	100	17.3	8.5	277	101	1	0	99
	Overall Means	138	94	17.4	8.0	287	114	2	1	97
	CV	8		5		3	6	137	278	5.4
	LSD (p=0.05)	10		0.7		8	6	2	2	3

**2017 GEM Raleigh Yield Trial Data (Top
20 Entries Ranked) Experiment 87**

			<i>All location Means</i>						<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Tester</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
36	P1794VYHR		153	105	17.4	8.8	280	108	2	0	98
29	NC320 x NC368		151	103	18.2	8.3	304	138	1	1	99
31	P2160YHR		150	103	19.4	7.7	268	96	1	0	99
35	P2088R		149	102	18.5	8.1	268	91	1	0	99
37	P1637R		147	101	17.7	8.3	282	98	1	0	99
4	NC476xP3737.NC492	NC320.NC368	143	98	18.2	7.9	294	127	4	1	95
42	P31G65		141	97	17.3	8.2	282	104	0	0	99
32	P1197R		136	93	16.3	8.3	247	87	1	0	99
30	P1498		134	92	17.5	7.7	250	87	0	0	100
38	DKC68-04		132	90	18.1	7.3	249	87	1	0	99
16	DK_84QAB1	LH283.LH287	131	90	17.3	7.6	261	93	0	0	99
34	P1184		131	90	17.0	7.7	257	93	1	0	99
33	LH132 x LH51		127	87	17.0	7.5	265	102	1	0	99
26	NP901	LH283.LH287	126	86	17.4	7.2	260	93	1	0	99
39	B73	LH283.LH287	126	86	17.1	7.4	266	102	2	0	98
23	LH200	LH283.LH287	125	86	17.2	7.3	256	96	1	0	99
9	UA_CQ806	LH132.FR1064	122	84	17.1	7.1	257	100	1	0	99
40	Mo17	LH132.FR1064	121	83	16.2	7.5	266	104	1	1	99
28	DK_WDAD1	LH283.LH287	120	82	16.2	7.4	248	87	1	0	99
10	DK_IBH9	LH132.FR1064	118	81	16.1	7.3	261	93	2	0	98
Replications			9		9	9	9	9	9	9	9
Test Entry Means			107		16.4	6.5	251	93	2	0	98
Check Means			146		18.2	8.0	269	96	1	0	99
Overall Means			117		16.8	6.9	257	95	1	0	99
Range			72-153		14.9-19.4	4.5-8.8	241-304	79-138	0-5	0-1	95-100
CV			10		4		3	8	154	515	2
LSD (p=0.05)			11		0.6		8	7	2	1	2

**2017 GEM Raleigh Yield Trial Data (Top 20
Entries Ranked) Experiment K7
Tester: LH283.LH287 unless otherwise noted**

		<i>All location Means</i>								<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Variance</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Test Weight</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
44	Pioneer 1745R	192	107	3277	19.5	10.0	56.4	284	108	3	4	93
45	Pioneer 2088R	188	105	3635	21.0	9.2	57.1	280	98	1	0	99
46	DeKalb 697	172	96	2114	20.7	8.3	58.3	278	121	5	0	95
42	LH310	166	93	2019	20.1	8.6	55.8	283	111	6	0	94
47	DeKalb 68-04	164	91	2105	20.4	8.1	56.2	255	93	6	0	94
37	GEMN-0272/(LH132.PHG39)	164	91	1742	18.9	9.0	56.6	289	115	4	0	95
9	BR51721:S20-025-001	161	90	2126	20.4	8.0	55.4	272	108	4	3	94
16	BR51501:S11a(S1#)-02-01	160	89	2635	20.3	8.1	56.6	279	110	7	9	85
5	BR106:S42-063-002	160	89	2625	20.4	8.1	56.8	275	114	3	5	92
31	GEMS-0281	158	88	2290	19.0	8.5	57.5	262	94	5	3	92
25	GEMS-0113	156	87	2612	18.9	8.7	57.3	279	102	6	0	94
30	GEMS-0255	155	87	2300	20.4	7.9	56.6	282	112	4	3	92
19	PASCO14:S11a-128-001	155	86	2206	20.1	7.9	56.7	275	112	12	3	85
8	BR106:S42-091-001	155	86	1552	20.9	7.6	57.0	281	110	4	7	89
1	BR106:S42-013-001	154	86	2242	21.2	7.5	56.8	278	113	3	6	91
29	GEMS-0243	154	86	2442	21.3	7.3	56.6	287	107	3	6	91
34	GEMN-0104/(LH132.PHG39)	154	86	1895	20.7	7.6	56.9	294	123	0	0	100
39	GEMN-0292/(LH132.PHG39)	153	85	2378	19.7	7.8	57.8	294	116	2	0	98
20	PASCO14:S11a-128-003	153	85	1702	19.4	8.4	55.7	291	115	10	3	86
23	GEMS-0027	153	85	1795	19.3	8.2	57.6	286	102	2	5	93
	Replications	17			17	17	11	6	6	9	9	9
	Test Entry Means	149			20	7.8	57	278	109	5	3	92
	Check Means	179			20.3	8.9	56.9	274	105	4	1	95
	Overall Means	152			19.9	7.8	57.1	277	109	5	3	92
	Range	130-192			17.5-22.3	6.4-10.0	55.4-59.1	255-294	91-125	0-17	0-15	80-100
	CV	11.0			4.6	11.4	2.1	3.6	7.0	163	292	12
	LSD (p=0.05)	11			0.6	0.6	0.8	7	5	5	6	8

**2017 GEM Raleigh Yield Trial Data (Top 20
Entries Ranked) Experiment L4
Tester: Pioneer 1498**

		<i>All location Means</i>								<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Variance</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Test Weight</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
32	Pioneer 2088R	174	105.7	4556	20.1	8.7	57.7	286	98	0	0	100
31	Pioneer 1745R	172	104.1	3573	19.2	9.1	56.7	289	113	0	0	100
22	CML343	170	103.1	3320	22.1	7.9	57.9	292	115	1	0	100
28	La Posta Sequia C7 F71-1-1-1-2-B*3	164	99.6	2103	22.0	7.5	56.9	287	121	2	0	98
34	DeKalb 697	164	99.3	2595	20.3	8.0	58.8	286	116	1	0	100
29	La Posta Sequia C7 F96-1-1-1-1-B*3	160	96.7	1738	21.4	7.5	57.3	297	120	1	0	100
23	CML373	159	96.6	2439	22.3	7.3	58.1	291	122	1	0	99
25	CML453	154	93.5	2191	25.1	6.4	56.7	300	140	0	0	100
24	CML449	153	92.6	2215	23.0	6.9	57.9	295	123	1	0	100
30	Pioneer 1498	153	92.5	3100	18.6	8.4	59.1	265	91	0	0	100
2	89291	152	92.1	1973	20.1	7.9	56.5	301	121	5	0	96
17	CML169	152	91.9	2505	21.7	7.1	58.1	307	128	1	0	100
27	La Posta Sequia C7 F64-1-1-1-1-B*3	152	91.9	2293	21.5	7.1	58.8	290	125	1	0	100
26	CLP-07306	151	91.2	2472	23.9	6.5	59.1	326	153	1	0	99
35	DeKalb 68-04	150	91.1	2269	19.9	7.7	57.0	261	96	1	0	99
16	CML125	150	90.7	2440	20.2	7.5	56.8	291	112	1	1	98
11	CML100	149	90.1	1763	20.4	7.5	57.9	286	129	2	0	98
5	NC296	148	89.9	2029	20.5	7.3	56.7	298	123	1	0	99
20	CML274	148	89.4	2151	21.4	7.1	57.3	297	125	0	0	100
3	90313	147	89.3	2168	21.2	7.6	55.8	308	134	2	0	98
	Replications	12			12	12	6	5	5	5	5	5
	Test Entry Means	148			21.6	7.1	58	298	126	2	0	98
	Check Means	165			19.8	8.5	57.4	281	106	0.4	0.0	100
	Overall Means	150			21.0	7.3	57.6	293	121	1.3	0.1	99
	Range	127-174			16.8-25.1	6.4-9.1	55.4-60.1	261-326	91-153	0-11	0-1	89-100
	CV	9.9			5.3	11.8	1.5	2.8	6.1	181	808	2.4
	LSD (p=0.05)	11.0			0.8	0.6	0.6	6.1	5.5	1.7	0.4	1.8

**2017 GEM Raleigh Yield Trial Data (Top 20
Entries Ranked) Experiment M6**

		<i>All location Means</i>								<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Variance</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Test Weight</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
26	P1794VYHR	216	109	3472	19.7	11.3	59.2	285	104	1	0	100
24	P1745R	211	107	4030	19.5	11.0	57.3	280	111	0	0	100
25	P2088R	211	106	4271	20.5	10.6	57.5	278	96	0	0	100
27	P1637R	203	103	4235	20.3	10.3	58.2	282	105	0	0	100
20	PHMK0/LH211	191	96	2687	20.1	9.6	57.7	290	118	2	0	98
28	DK697	189	96	2397	20.4	9.5	58.9	273	119	0	0	100
22	PHMK0/LH213	182	92	1543	18.9	9.8	57.4	281	103	0	0	100
9	LH197/PHR03	182	92	2912	20.1	9.2	60.1	294	114	0	0	100
10	PHP38/LH211	180	91	2686	18.8	9.9	59.7	284	112	0	0	100
3	LH193/PHR03	180	91	2822	20.5	8.9	59.4	266	104	3	0	97
29	DKC68-04	179	91	2685	20.5	9.0	56.7	250	96	0	0	100
14	LH212Ht/PHHB4	177	89	2964	18.0	9.8	58.7	270	107	1	0	100
17	PHW52/LH211	177	89	2434	18.9	9.7	59.2	275	110	1	0	99
11	PHP38/LH212Ht	176	89	2436	18.0	9.8	60.2	266	102	0	0	100
23	Doebler 561XY	172	87	1807	17.2	10.0	59.4	259	100	0	0	100
16	PHHB4/LH218	170	86	1749	18.6	9.1	58.8	284	110	1	0	99
18	LH212Ht/PHW52	170	86	2182	18.9	9.1	58.4	261	98	0	0	100
13	PHP38/LH218	170	86	2724	18.2	9.7	58.2	277	105	0	0	100
21	PHMK0/LH212Ht	168	85	2883	18.1	9.4	57.9	264	103	0	0	100
4	LH195/PHK56	167	84	2315	17.8	9.2	59.4	256	91	0	0	100
	Replications	12			12	12	5	5	5	6	6	6
	Test Entry Means	169			18.8	9.2	58.8	272	103	0	0	99
	Check Means	198			20.2	10.0	57.6	270	105	0.1	0.0	100
	Overall Means	174			18.9	9.4	58.7	272	103	0.4	0.1	99
	Range	154-216			17.2-20.5	8.3-11.3	56.7-60.2	250-294	86-119	0-3	0-1	97-100
	CV	10.0			4.4	10.5	1.5	2.6	5.6	350	864	1.7
	LSD (p=0.05)	13.4			0.6	0.8	0.7	5.5	4.5	1	1	1.3

**2017 GEM Raleigh Yield Trial Data (Top 20
Entries Ranked) Experiment M7**

			All location Means							Percent		
Entry	Pedigree	Tester	Yield	% Yield /CHK	Variance	Moist	Yield/ Moist	Plant Height	Ear Height	Stalk Lodging	Root Lodging	Erect Plants
51	P1794VYHR		176	114	1230	17.5	9.2	293	113	2	0	98
48	DKC65-18		166	107	1102	18.4	8.5	253	92	0	0	100
52	P1637R		165	106	1693	17.3	8.9	289	108	0	0	100
55	P31G65		162	105	1625	17.4	8.5	292	118	0	0	100
50	P2088R		162	105	1526	18.3	8.3	284	104	0	0	100
47	P1197R		157	101	1238	16.1	9.2	254	91	0	0	100
49	P1745R		157	101	1878	17.1	8.5	280	107	1	0	99
54	DKC68-04		152	98	1790	17.7	7.9	255	97	0	0	100
53	DK697		149	96	914	17.9	7.8	276	115	1	0	99
13	Cubano amarillo-BVIR 102/PHB47	LH283.LH287	132	85	1223	17.6	6.8	286	116	5	0	95
46	Doebler 561XY		132	85	530	15.8	7.8	266	106	2	0	98
56	HC33 x TR7322		130	84	1299	16.0	7.4	273	106	1	0	99
22	Dentado amarillo-ARZM 16 075/PHZ51	LH132.PHG39	129	83	1293	17.2	6.5	291	118	3	0	97
15	Tuxpeño-BVIR 153/PHB47	LH283.LH287	127	82	367	17.5	6.8	294	119	7	0	92
30	Semi-dentado rugoso-URZM 13 052/PHZ51	LH132.PHG39	125	80	1140	17.5	6.4	293	121	3	0	97
39	Tuxpeño-BVIR 153/PHZ51	LH132.PHG39	124	80	782	18.2	6.4	320	137	3	1	97
19	Canario de formosa-ARZM 06 016/PHZ51	LH132.PHG39	122	79	1158	17.9	6.2	303	128	2	0	98
11	Chandelle-BVIR 116/PHB47	LH283.LH287	122	79	207	17.7	6.5	287	115	5	0	94
12	Coastal tropical flint-BVIR 104/PHB47	LH283.LH287	122	79	297	17.6	6.5	293	114	7	0	92
44	Tuxpeño-ECU 942/PHZ51	LH132.PHG39	122	79	1296	18.0	6.1	304	122	1	0	99
Replications			7			7	7	5	5	6	6	6
Test Entry Means			116		774	17.3	6.1	290	118	4	0	96
Check Means			155		1527	17.8	8.2	274	106	0.4	0.0	100
Overall Means			123		887	17.3	6.6	287	115	3.3	0.1	97
Range			92-176			15.8-18.4	4.9-9.2	253-322	91-142	0-9	0-1	90-100
CV			11.8			3.3	11.8	4.0	8.4	89	362	3.1
LSD (p=0.05)			13.5			0.5	0.7	10.5	9.0	3	0	2.8

**2017 GEM Raleigh Yield Trial Data (Top
20 Entries Ranked) Experiment M8**

			<i>All location Means</i>								<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Tester</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Variance</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Test Weight</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
33	P2088R		172	107	2785	19.9	8.8	56.5	285	99	1	0	100
32	P1745R		165	102	2537	18.8	8.9	56.7	277	104	0	0	100
35	DKC68-04		155	96	1906	19.1	8.4	57.1	257	96	0	0	100
17	NC320	LH283.LH287	154	96	1489	19.0	8.3	58.2	290	114	1	0	99
34	DK697		153	95	1419	19.9	7.9	58.6	282	119	1	0	99
25	GEMS-0243	LH283.LH287	152	94	2350	19.9	7.8	57.7	288	115	2	0	98
24	GEMS-0032	LH283.LH287	151	94	1740	19.1	8.2	57.6	283	110	3	0	97
27	GEMN-0135	LH132.PHG39	151	93	1703	18.9	8.2	58.5	293	110	2	0	98
3	CML277/CML341-01-Sib/01-02-#	LH283.LH287	149	93	1915	21.4	7.2	56.0	297	130	7	2	92
23	GEMN-0254	LH132.PHG39	149	92	1863	18.9	7.9	59.7	289	111	0	0	100
4	CML277/CML341-01-Sib/01-02-#	LH132.PHG39	147	91	1239	21.7	6.7	57.2	296	131	1	0	99
26	GEMN-0104	LH132.PHG39	146	91	1702	19.8	7.5	57.6	290	119	1	0	99
18	NC320	LH132.PHG39	145	90	1635	19.2	7.7	58.9	294	127	0	0	100
22	GEMN-0254	LH132.FR1064	142	88	1439	18.8	7.8	59.6	275	102	2	0	98
28	LH211	LH132.PHG39	142	88	1597	18.0	8.1	59.4	292	116	1	0	99
8	M162W	LH132.PHG39	142	88	1668	20.0	7.3	56.1	289	124	3	0	97
21	Ki21:S(DJ7)(GEMS-0115)-B-51-B	LH283.LH287	142	88	1468	18.7	7.6	58.1	277	107	3	1	96
20	(GEMS-0147/GEMS-0115)-B-2-1-B	LH283.LH287	140	87	1754	18.7	7.7	57.0	271	103	3	0	97
31	Doebler 561XY		139	86	2055	16.7	8.6	58.4	262	100	0	0	100
5	M37W	LH283.LH287	138	85	1805	20.6	7.0	57.1	287	117	4	0	96
	Replications		10			10	10	4	5	5	6	6	6
	Test Entry Means		138		1537	20	7	57	283	112	2	0	98
	Check Means		161		2162	19.4	8.5	57.2	275	104	1	0	99
	Overall Means		141		1625	20	7	58	281	110	2	0	98
	Range		123-172			16.7-22.4	6.0-8.9	55.5-59.7	255-300	88-131	0-7	0-2	92-100
	CV		9.7			5.0	11.1	1.5	3.1	6.1	148.6	527.2	3.0
	LSD (p=0.05)		10.6			0.7	0.6	0.7	7	5	2.1	0.4	2

**2017 GEM Raleigh Yield Trial Data (Top 20 Entries
Ranked) Experiment M9
Tester: Dow non-SSS (unless otherwise noted)**

		<i>All location Means</i>							<i>Percent</i>		
<i>Entry</i>	<i>Pedigree</i>	<i>Yield</i>	<i>% Yield /CHK</i>	<i>Variance</i>	<i>Moist</i>	<i>Yield/ Moist</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Stalk Lodging</i>	<i>Root Lodging</i>	<i>Erect Plants</i>
41	DKC68-04	154	103	2046	19.2	7.9	265	99	0	0	100
38	P1745R	150	101	1267	18.8	7.9	280	104	0	6	93
40	DK697	148	99	1434	19.7	7.5	277	115	1	0	99
14	GEMS-0265	145	97	848	20.3	7.1	266	95	0	0	100
39	P2088R	144	97	1149	19.3	7.4	278	93	1	0	100
27	GEMS-0293	143	96	858	21.5	6.7	271	103	1	0	99
30	CML343:S(NS701)-B-115	142	96	888	19.4	7.3	264	96	0	0	100
26	CML341:S42-B-004	138	92	49	21.4	7.0	280	113	0	1	99
29	CML343:S(NS701)-B-113	137	92	773	19.7	6.9	252	89	1	4	96
16	GEMS-0269	137	92	941	19.5	7.0	254	89	0	0	100
21	GEMS-0279	137	92	1535	20.1	6.7	274	97	1	0	99
35	GEMS-0262 x LH283.LH287	136	91	1090	19.2	7.1	269	101	0	7	93
10	GEMS-0256	136	91	729	20.3	6.7	279	107	0	0	100
36	GEMS-0281 x LH283.LH287	136	91	1305	18.4	7.3	268	96	2	1	96
13	GEMS-0264	135	90	1536	20.6	6.5	257	87	0	0	100
18	GEMS-0276	134	90	1083	20.0	6.6	245	81	0	0	100
31	GEMS-0027 x LH283.LH287	134	90	405	19.0	7.0	292	116	0	9	91
23	GEMS-0281	133	89	650	19.5	6.8	264	84	1	0	99
1	GEMS-0027	133	89	369	19.0	7.0	281	106	1	1	98
34	GEMS-0255 x LH283.LH287	132	89	1385	19.2	6.8	277	110	0	7	93
	Replications	6			6	6	6	6	6	6	6
	Test Entry Means	129			19.7	6.6	267	96	1	1	98
	Check Means	149			19.2	7.7	275	103	0	2	98
	Overall Means	131			19.3	6.8	267	96	1	1	98
	Range	110-154			16.7-21.5	5.8-7.9	245-292	79-116	0-5	0-9	91-100
	CV	8.6			5.2	9.6	3.7	8.1	190	534	5.4
	LSD (p=0.05)	11.8			1.1	0.7	10	8	1.5	5.7	6

2017 GEM Ames Yield Trial Summary									
Expt #	Material	Tester	Total	Reps	Source	Entry Yield Avg.	Check Yield Avg.	Overall Yield Avg.	CV (%)
1713101	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)	MBS3520	72	6	GEM	153.3	221.0	158.4	15.8
1713102	ATL100:N(LH82)(GEMN-0097)	MBS3520	96	6	GEM	185.6	219.8	187.5	10.6
1713103	BR51039:S(4676A)(GEMS-0162)	MBS9451	60	6	GEM	172.2	213.6	175.7	11.7
1713104	CML373:S(PHJ40)(GEMS-0162)	MBS9451	84	6	GEM	162.9	219.2	166.3	10.6
1713105	CML373:S(PHJ40)(GEMS-0162)	MBS9451	72	6	GEM	159.9	217.9	163.9	10.4
1713106	DKXL380:S08b(GEMS-0163)	MBS9451	48	6	GEM	179.5	217.4	183.8	9.4
1713107	PUER5:N(LH61)(GEMN-0097)	MBS3520	48	6	GEM	169.3	218.0	173.6	13.2
1714101	(LH57/CML373)/GEMN-0155	MBS2655, MBS3520	72	6	GEM	179.3	222.1	182.2	12.5
1714102	(DJ7/CML373)/GEMS-0162	MBS9451	72	6	GEM	178.4	212.9	180.8	10.3
1714103	(DJ7/CML373)/GEMS-0162	MBS9451	60	6	GEM	181.0	222.0	183.9	9.8
1714104	(PHB47/CML373)/GEMS-0162	MBS8731	96	6	GEM	195.9	216.8	197.0	12.0
1714105	GEMS-0115/CUBA164:T26aS41-B-040-B	MBS9451	60	6	GEM	184.6	210.7	186.3	9.9
1714106	GEMS-0115/CUBA164:T26aS41-B-040-B	MBS9451	60	6	GEM	178.7	209.0	180.4	9.7
1714107	GEMS-0162/PHP38	MBS9451	60	6	GEM	178.1	211.5	180.9	9.8
1714108	GEMS-0162/PHP38	MBS9451	60	6	GEM	177.2	211.5	180.2	9.6
1714109	GEMS-0227/(GEMS-0162/PHP38)	MBS8731	108	6	GEM	212.0	206.0	211.7	8.6
1714110	GEMS-0227/PHP38	MBS8731	72	6	GEM	217.3	220.5	217.5	7.3
1714111	GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001	MBS9451	108	6	GEM	168.3	202.3	169.6	12.5
1754101	(LH195/KO679Y)/GEMS-0227	MBS9451	60	6	GEM	186.1	210.0	188.3	8.8
1754102	3IIH6 /(GEMN-0173/KO679Y)	MBS3520	36	6	GEM	183.2	211.2	187.1	11.0
1754103	3IIH6 /(GEMN-0173/KO679Y)	MBS8731	36	6	GEM	180.0	209.6	183.1	10.7
1754104	LH195/KO679Y	MBS9451	72	6	GEM	176.8	213.4	179.5	8.6
1754105	GEMS-0227/(LH195/KO679Y)	MBS9451	96	6	GEM	171.9	208.4	173.9	12.0
1764101	GEMN-0192/MSU 1	MBS2655, MBS3520	36	6	GEM	159.6	209.3	167.4	14.9
1764201	Retest1	MBS2655	48	8	GEM	179.7	206.9	182.8	11.1
1764202	Retest2	MBS2655	36	8	GEM	172.5	216.9	178.7	10.7
1764203	Retest3	MBS3520	48	8	GEM	190.4	226.9	194.2	10.7
1764204	Retest4	MBS3520	60	8	GEM	184.9	231.1	188.9	10.4
1764205	Retest5	MBS5411, MBS6780	48	8	GEM	164.7	205.3	169.0	13.9
1764206	Retest6	MBS6403	60	8	GEM	188.1	223.5	191.1	10.6
1764207	Retest7	MBS6858, MBS8731	48	8	GEM	214.6	214.9	214.6	8.9
1764208	Retest8	MBS8731, MBS8814	48	8	GEM	194.7	210.5	196.7	9.2
1764209	Retest9	MBS9451	48	8	GEM	185.7	221.7	189.4	11.2
1764210	Retest10	MBS9451	36	8	GEM	177.6	201.3	181.2	10.7
1764211	Retest11	MBS9508	36	8	GEM	183.3	213.6	187.8	11.4
1764301	Released lines - trial 1	MBS2535, MBS2614	48	8	GEM	176.2	204.2	178.6	9.9
1764302	Released lines - trial 2	MBS5411	36	8	GEM	178.8	214.8	183.0	11.3
1764303	Released lines - trial 3	MBS6312	36	8	GEM	181.0	206.8	184.6	10.4
1764304	Released lines - trial 4	MBS8234	36	8	GEM	171.7	213.9	177.6	8.9
1764305	Released lines - trial 5	MBS9451	36	8	GEM	180.0	200.0	183.3	9.0
1764306	Released lines - trial 6	MBS6780, MBS8668	72	8	GEM	188.8	199.2	189.8	9.8
1764307	Released lines - trial 7	MBS6858, MBS8731	72	9	GEM	183.1	192.1	183.9	11.6
Total: 42					Average:	180.6	212.8	183.7	10.7

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713101

Tester: MBS3520

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
72	Pioneer 31N27	245.4	111.0	20.3	12.1	58.1	13.7	4.4	6	290	127
69	Pioneer 31D58	235.0	106.3	20.2	11.6	57.6	5.1	0.0	7	272	105
68	MBS3520/MBS8814	233.6	105.7	18.8	12.4	53.5	2.4	0.0	5	275	108
70	Pioneer 33F85	228.5	103.4	19.6	11.7	57.2	7.7	0.0	7	293	115
71	Pioneer 34R65	208.8	94.5	18.6	11.2	58.5	0.4	0.0	7	278	97
32	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-045-002/MBS3520	201.2	91.0	21.0	9.6	57.5	1.4	34.3	2	285	118
67	MBS2655/MBS9508	198.9	90.0	17.8	11.2	57.8	3.0	2.3	5	273	107
39	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-068-002/MBS3520	196.2	88.8	20.0	9.8	57.1	1.0	3.7	3	305	133
17	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-027-001/MBS3520	196.1	88.7	20.4	9.6	57.5	7.6	12.1	4	297	122
10	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-015-001/MBS3520	193.7	87.6	19.5	9.9	56.7	2.5	11.5	5	287	117
65	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-118-001/MBS3520	192.7	87.2	20.7	9.3	57.0	2.4	36.4	3	293	120
38	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-068-001/MBS3520	190.5	86.2	20.5	9.3	57.1	1.5	15.3	6	290	112
3	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-004-001/MBS3520	187.6	84.9	19.5	9.6	57.9	5.1	9.9	3	298	123
28	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-041-001/MBS3520	186.5	84.4	21.3	8.8	57.8	3.0	13.5	6	262	102
35	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-050-001/MBS3520	184.4	83.4	20.9	8.8	56.7	6.9	3.2	7	262	122
62	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-112-001/MBS3520	180.7	81.8	20.9	8.6	55.8	10.8	9.2	4	280	110
1	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-002-001/MBS3520	180.0	81.4	19.2	9.4	56.0	1.5	1.5	6	297	113
31	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-045-001/MBS3520	179.8	81.4	20.5	8.8	57.2	4.2	30.3	2	270	115
40	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-069-001/MBS3520	178.5	80.8	19.7	9.1	56.7	18.0	5.9	4	303	127
43	ATL100:N(LH61)(ANTIG03:N1242-B-007-B)-075-001/MBS3520	172.5	78.1	20.7	8.3	56.9	15.1	3.5	4	293	120
Number Locations		5		5	5	4	3	3	1	1	1
Mean		158.4		20.3	7.8	56.9	3.4	6.8	5	283	111
Non Check Mean		153.3		20.4	7.5	56.9	3.4	7.3	5	283	111
Check Means		221.0		19.0	11.6	56.9	3.7	0.5	6	278	106
CV		15.8		4.6		1.3					
Yield Range		82.3 - 245.4									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713102

Tester: MBS3520

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
93	MBS3520/MBS8814	239.0	108.7	18.8	12.7	53.6	3.3	1.1	7.0	285	124
94	Pioneer 31D58	232.7	105.9	20.7	11.2	57.2	6.5	0.0	9.0	281	115
70	ATL100:N(LH82)(GEMN-0097)-255-001/MBS3520	230.2	104.7	21.1	10.9	55.9	16.2	0.5	6.0	305	123
95	Pioneer 33F85	228.1	103.8	20.1	11.3	57.1	2.7	0.0	8.0	276	107
81	ATL100:N(LH82)(GEMN-0097)-290-001/MBS3520	226.9	103.2	17.9	12.7	54.7	9.4	6.1	6.0	309	128
18	ATL100:N(LH82)(GEMN-0097)-140-001/MBS3520	222.1	101.0	19.5	11.4	54.7	3.0	10.5	7.0	289	128
13	ATL100:N(LH82)(GEMN-0097)-121-001/MBS3520	217.2	98.8	20.2	10.8	54.5	1.0	1.9	7.0	290	116
25	ATL100:N(LH82)(GEMN-0097)-151-001/MBS3520	214.7	97.7	18.8	11.4	56.4	2.5	1.6	7.0	304	121
7	ATL100:N(LH82)(GEMN-0097)-090-001/MBS3520	212.0	96.5	18.4	11.5	55.4	3.5	0.5	4.0	287	113
41	ATL100:N(LH82)(GEMN-0097)-183-001/MBS3520	211.2	96.1	20.6	10.3	56.5	1.9	0.5	7.0	297	133
5	ATL100:N(LH82)(GEMN-0097)-087-001/MBS3520	208.8	95.0	19.4	10.8	58.1	3.0	0.0	7.0	270	105
40	ATL100:N(LH82)(GEMN-0097)-181-001/MBS3520	205.2	93.4	19.3	10.6	55.4	4.2	0.5	7.0	284	122
39	ATL100:N(LH82)(GEMN-0097)-180-001/MBS3520	205.0	93.3	19.5	10.5	57.0	2.0	0.0	5.0	293	129
49	ATL100:N(LH82)(GEMN-0097)-201-001/MBS3520	204.6	93.1	18.4	11.1	56.0	2.5	16.6	6.0	294	123
90	ATL100:N(LH82)(GEMN-0097)-325-001/MBS3520	204.5	93.0	19.1	10.7	55.6	6.8	1.0	8.0	299	128
24	ATL100:N(LH82)(GEMN-0097)-149-001/MBS3520	204.3	92.9	20.2	10.1	55.1	17.5	1.4	6.0	287	116
50	ATL100:N(LH82)(GEMN-0097)-202-001/MBS3520	203.9	92.8	18.5	11.0	56.5	7.4	1.9	5.0	293	115
36	ATL100:N(LH82)(GEMN-0097)-172-001/MBS3520	202.9	92.3	17.6	11.5	57.1	6.2	0.0	7.0	290	116
27	ATL100:N(LH82)(GEMN-0097)-152-001/MBS3520	202.8	92.3	18.7	10.8	54.4	1.3	10.8	5.0	291	129
34	ATL100:N(LH82)(GEMN-0097)-169-001/MBS3520	202.7	92.2	19.8	10.2	56.5	2.5	7.4	6.0	280	113
Number Locations		6		6	6	5	4	3	1	2	2
Mean		187.5		19.0	9.9	55.8	3.7	5.6	6	287	118
Non Check Mean		185.6		18.9	9.8	55.8	3.7	5.9	6	287	119
Check Means		219.8		19.2	11.4	56.8	3.3	0.4	7	279	109
CV		10.6		4.7		1.4					
Yield Range		110.9 - 239.0									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, and Keota in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713103

Tester: MBS9451

		All Location Means									
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early	Plant Height	Ear Height
									R.L. Rating		
58	Pioneer 31D58	239.5	112.1	20.2	11.9	56.9	2.4	0.0	9	305	118
57	MBS3520/MBS8814	235.2	110.1	19.3	12.2	52.8	4.2	1.1	9	295	127
59	Pioneer 33F85	209.9	98.3	19.3	10.9	56.7	8.7	3.8	8	272	107
6	BR51039:S(4676A)(GEMS-0162)-SIB-018-001/MBS9451	196.7	92.1	20.6	9.5	55.5	5.3	6.2	7	277	113
38	BR51039:S(4676A)(GEMS-0162)-SIB-106-001/MBS9451	195.2	91.4	20.8	9.4	56.3	9.3	5.8	6	273	117
19	BR51039:S(4676A)(GEMS-0162)-SIB-042-001/MBS9451	194.9	91.2	19.9	9.8	55.6	2.1	9.1	4	303	107
56	MBS2655/MBS9508	192.4	90.1	18.2	10.6	57.9	2.2	5.7	7	237	110
60	Pioneer 34R65	191.2	89.5	18.3	10.4	57.4	0.5	0.8	8	283	92
41	BR51039:S(4676A)(GEMS-0162)-SIB-114-001/MBS9451	189.1	88.5	20.0	9.5	54.7	1.9	2.3	6	278	103
40	BR51039:S(4676A)(GEMS-0162)-SIB-113-001/MBS9451	189.0	88.5	21.6	8.8	55.4	2.5	8.2	6	312	130
51	BR51039:S(4676A)(GEMS-0162)-SIB-136-001/MBS9451	188.8	88.4	21.5	8.8	55.0	1.0	4.9	8	265	107
24	BR51039:S(4676A)(GEMS-0162)-SIB-056-001/MBS9451	188.2	88.1	19.3	9.8	54.5	15.2	4.0	5	278	112
39	BR51039:S(4676A)(GEMS-0162)-SIB-108-001/MBS9451	186.9	87.5	20.3	9.2	55.0	3.9	1.7	7	273	117
30	BR51039:S(4676A)(GEMS-0162)-SIB-078-001/MBS9451	186.4	87.3	19.7	9.5	56.0	2.9	0.0	8	300	87
18	BR51039:S(4676A)(GEMS-0162)-SIB-039-001/MBS9451	186.2	87.2	19.4	9.6	55.5	8.4	15.1	5	260	97
42	BR51039:S(4676A)(GEMS-0162)-SIB-116-001/MBS9451	185.7	86.9	19.9	9.3	56.9	1.4	0.0	6	280	117
2	BR51039:S(4676A)(GEMS-0162)-SIB-008-001/MBS9451	185.2	86.7	20.5	9.0	57.3	4.8	1.1	5	275	113
14	BR51039:S(4676A)(GEMS-0162)-SIB-033-001/MBS9451	185.0	86.6	20.1	9.2	53.1	16.1	13.7	5	268	117
10	BR51039:S(4676A)(GEMS-0162)-SIB-024-001/MBS9451	184.8	86.5	20.1	9.2	55.6	3.4	2.2	6	280	120
37	BR51039:S(4676A)(GEMS-0162)-SIB-103-001/MBS9451	183.1	85.7	20.3	9.0	56.7	5.0	0.8	6	285	117
Number Locations		6		6	6	3	3	4	1	1	1
Mean		175.7		20.1	8.7	55.6	4.4	4.7	7	284	112
Non Check Mean		172.2		20.1	8.6	55.6	4.5	4.9	7	285	112
Check Means		213.6		19.1	11.2	56.4	3.6	2.3	8	278	111
CV		11.7		4.5		1.3					
Yield Range		120.0 - 239.5									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Vigo in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713104

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
82	Pioneer 31D58	250.1	114.1	20.3	12.3	57.6	4.9	0.0	7	285	115
83	Pioneer 33F85	229.2	104.6	20.1	11.4	56.7	0.8	0.0	8	292	113
81	MBS3520/MBS8814	218.4	99.6	19.7	11.1	54.3	1.4	0.0	7	290	118
84	Pioneer 34R65	200.0	91.2	18.3	10.9	58.8	1.9	0.0	9	280	90
80	MBS2655/MBS9508	198.1	90.4	18.4	10.8	58.2	9.0	3.8	5	283	107
30	CML373:S(PHJ40)(GEMS-0162)-043-002/MBS9451	188.1	85.8	20.3	9.3	57.2	0.0	0.0	5	285	120
22	CML373:S(PHJ40)(GEMS-0162)-029-002/MBS9451	187.6	85.6	20.6	9.1	55.7	1.7	0.5	3	293	130
27	CML373:S(PHJ40)(GEMS-0162)-037-001/MBS9451	187.2	85.4	19.8	9.5	57.4	0.9	1.1	6	298	123
51	CML373:S(PHJ40)(GEMS-0162)-068-001/MBS9451	185.2	84.5	20.1	9.2	57.4	2.2	0.0	7	300	115
35	CML373:S(PHJ40)(GEMS-0162)-048-001/MBS9451	181.8	82.9	21.4	8.5	56.6	0.7	2.8	5	297	117
48	CML373:S(PHJ40)(GEMS-0162)-065-002/MBS9451	179.6	81.9	19.7	9.1	56.1	0.7	1.0	6	285	127
9	CML373:S(PHJ40)(GEMS-0162)-017-002/MBS9451	178.5	81.4	19.6	9.1	57.7	2.6	0.0	8	277	100
71	CML373:S(PHJ40)(GEMS-0162)-095-001/MBS9451	178.2	81.3	21.9	8.1	56.2	4.8	4.6	5	282	120
72	CML373:S(PHJ40)(GEMS-0162)-096-001/MBS9451	177.9	81.2	21.2	8.4	56.9	1.9	6.7	8	282	103
24	CML373:S(PHJ40)(GEMS-0162)-033-001/MBS9451	177.8	81.1	20.8	8.5	57.7	4.4	5.7	5	290	110
73	CML373:S(PHJ40)(GEMS-0162)-096-002/MBS9451	177.6	81.0	19.6	9.1	56.4	0.0	0.5	6	272	107
79	CML373:S(PHJ40)(GEMS-0162)-110-001/MBS9451	177.4	80.9	21.6	8.2	56.8	0.7	0.0	5	288	125
42	CML373:S(PHJ40)(GEMS-0162)-057-002/MBS9451	176.6	80.6	20.8	8.5	56.5	1.5	2.5	5	285	97
12	CML373:S(PHJ40)(GEMS-0162)-020-001/MBS9451	176.1	80.3	20.9	8.4	57.2	0.0	0.5	5	300	117
56	CML373:S(PHJ40)(GEMS-0162)-074-002/MBS9451	175.7	80.2	20.1	8.7	56.6	0.0	0.5	6	288	105
Number Locations		5		5	5	2	2	3	1	1	1
Mean		166.3		20.1	8.3	56.9	1.8	1.3	6	287	109
Non Check Mean		162.9		20.1	8.1	56.9	1.7	1.4	6	287	109
Check Means		219.2		19.4	11.3	57.1	3.6	0.8	7	286	109
CV		10.6		4.4		1.2					
Yield Range		126.8 - 250.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713105

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
70	Pioneer 31D58	232.6	106.7	20.6	11.3	58.2	11.1	0.0	8	288	120
71	Pioneer 33F85	222.0	101.9	19.9	11.2	57.1	3.5	0.0	8	293	123
69	MBS3520/MBS8814	216.9	99.5	19.6	11.1	53.7	4.9	1.5	7	295	127
68	MBS2655/MBS9508	213.0	97.8	18.3	11.6	58.2	7.0	0.0	6	283	118
72	Pioneer 34R65	204.8	94.0	18.5	11.1	58.5	0.7	2.2	9	283	92
37	CML373:S(PHJ40)(GEMS-0162)-182-002/MBS9451	195.3	89.6	21.2	9.2	55.9	3.8	3.1	4	290	127
58	CML373:S(PHJ40)(GEMS-0162)-231-001/MBS9451	183.8	84.4	20.8	8.8	54.8	0.0	1.0	6	280	128
53	CML373:S(PHJ40)(GEMS-0162)-220-001/MBS9451	182.1	83.6	20.6	8.8	57.9	0.0	0.0	5	283	120
27	CML373:S(PHJ40)(GEMS-0162)-170-001/MBS9451	181.4	83.2	21.0	8.6	55.8	5.7	0.7	8	273	113
34	CML373:S(PHJ40)(GEMS-0162)-178-001/MBS9451	180.5	82.8	18.6	9.7	59.1	4.4	1.5	6	293	123
2	CML373:S(PHJ40)(GEMS-0162)-113-002/MBS9451	177.7	81.6	20.1	8.8	57.3	0.0	0.0	6	283	118
25	CML373:S(PHJ40)(GEMS-0162)-169-001/MBS9451	177.1	81.3	21.5	8.2	56.6	0.8	0.0	7	300	105
61	CML373:S(PHJ40)(GEMS-0162)-235-001/MBS9451	176.8	81.1	19.5	9.1	58.5	1.4	0.0	6	303	118
66	CML373:S(PHJ40)(GEMS-0162)-248-001/MBS9451	175.5	80.5	19.0	9.2	55.4	6.1	3.9	5	287	132
20	CML373:S(PHJ40)(GEMS-0162)-148-002/MBS9451	175.2	80.4	20.1	8.7	56.7	1.5	0.8	6	288	105
41	CML373:S(PHJ40)(GEMS-0162)-191-001/MBS9451	174.1	79.9	21.4	8.1	55.8	0.8	2.2	6	295	125
52	CML373:S(PHJ40)(GEMS-0162)-211-001/MBS9451	173.8	79.8	21.3	8.2	56.5	0.0	0.0	8	272	127
36	CML373:S(PHJ40)(GEMS-0162)-182-001/MBS9451	173.2	79.5	21.6	8.0	57.0	1.5	0.0	5	272	103
18	CML373:S(PHJ40)(GEMS-0162)-143-001/MBS9451	172.6	79.2	20.7	8.3	54.9	1.5	0.7	8	272	108
62	CML373:S(PHJ40)(GEMS-0162)-236-001/MBS9451	172.3	79.1	20.5	8.4	56.2	4.4	0.0	5	288	115
Number Locations		5		5	5	2	2	2	1	1	1
Mean		163.9		20.1	8.2	56.9	1.9	1.0	7	281	109
Non Check Mean		159.9		20.2	7.9	56.9	1.6	1.1	7	280	109
Check Means		217.9		19.4	11.2	57.1	5.4	0.7	8	288	116
CV		10.4		4.6		2.8					
Yield Range		103.4 - 232.6									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713106

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
43	Pioneer 31D58	235.5	108.3	20.5	11.5	57.6	5.6	0.0	7	267	98
42	MBS3520/MBS8814	232.8	107.1	18.7	12.4	52.8	8.5	0.0	7	293	115
46	Pioneer 31N27	227.3	104.6	20.7	11.0	57.9	16.6	4.9	7	278	103
44	Pioneer 33F85	214.0	98.4	19.5	11.0	56.7	7.1	4.8	8	265	98
41	MBS2655/MBS9508	210.4	96.8	17.8	11.8	58.7	8.3	9.5	7	272	100
21	DKXL380:S08b(GEMS-0163)-SIB-037-001/MBS9451	206.6	95.0	18.6	11.1	53.8	16.4	2.1	7	270	113
47	MBS2655/MBS9451	203.4	93.6	17.7	11.5	54.9	17.4	0.0	8	307	113
48	MBS3520/MBS9451	197.4	90.8	17.5	11.3	54.2	6.1	0.0	9	307	110
27	DKXL380:S08b(GEMS-0163)-SIB-042-001/MBS9451	195.9	90.1	18.2	10.8	56.1	1.6	1.1	6	272	113
45	Pioneer 34R65	194.3	89.4	18.4	10.6	57.9	0.7	0.0	9	287	103
4	DKXL380:S08b(GEMS-0163)-SIB-006-002/MBS9451	190.3	87.5	17.8	10.7	56.3	0.7	0.0	8	287	108
34	DKXL380:S08b(GEMS-0163)-SIB-057-001/MBS9451	189.9	87.4	17.9	10.6	54.1	8.9	0.6	8	300	123
1	DKXL380:S08b(GEMS-0163)-SIB-002-001/MBS9451	187.9	86.4	17.9	10.5	55.7	6.1	1.4	8	278	125
2	DKXL380:S08b(GEMS-0163)-SIB-005-001/MBS9451	187.0	86.0	18.7	10.0	56.2	4.8	3.9	6	275	113
39	DKXL380:S08b(GEMS-0163)-SIB-063-001/MBS9451	185.2	85.2	18.4	10.1	55.9	27.4	2.9	8	275	118
6	DKXL380:S08b(GEMS-0163)-SIB-012-002/MBS9451	183.6	84.5	18.3	10.0	55.8	8.5	0.0	7	270	108
29	DKXL380:S08b(GEMS-0163)-SIB-044-001/MBS9451	182.6	84.0	18.2	10.0	55.9	3.2	5.8	5	277	108
14	DKXL380:S08b(GEMS-0163)-SIB-023-003/MBS9451	182.5	83.9	17.2	10.6	56.6	9.0	0.4	8	295	120
9	DKXL380:S08b(GEMS-0163)-SIB-016-002/MBS9451	182.2	83.8	17.3	10.5	55.9	7.0	3.1	9	267	117
36	DKXL380:S08b(GEMS-0163)-SIB-060-001/MBS9451	181.6	83.5	18.3	9.9	53.9	17.4	10.5	9	293	130
Number Locations		5		5	5	4	2	3	1	1	1
Mean		183.8		18.3	10.0	55.3	9.1	3.3	8	276	110
Non Check Mean		179.5		18.2	9.9	55.2	9.5	3.3	8	276	110
Check Means		217.4		19.0	11.4	56.7	6.0	2.9	8	277	103
CV		9.4		4.7		1.3					
Yield Range		154.7 - 235.5									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1713107

Tester: MBS3520

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
43	Pioneer 31D58	258.0	118.3	20.0	12.9	58.2	3.1	2.3	8	289	119
47	MBS2655/MBS8731	235.1	107.8	20.2	11.6	53.3	2.4	0.0	7	294	121
42	MBS3520/MBS8814	227.7	104.4	20.5	11.1	53.0	3.9	0.7	6	297	124
46	Pioneer 31N27	221.6	101.7	20.9	10.6	57.8	19.6	0.9	7	299	121
44	Pioneer 33F85	218.6	100.3	19.8	11.0	57.7	0.5	0.0	8	284	114
41	MBS2655/MBS9508	213.8	98.1	18.6	11.5	57.8	2.0	0.0	7	282	114
48	MBS3520/MBS9451	211.7	97.1	18.1	11.7	54.3	1.8	0.0	8	294	111
45	Pioneer 34R65	211.7	97.1	19.0	11.1	58.3	0.0	0.0	9	281	93
18	PUER5:N(LH61)(GEMN-0097)-SIB-087-001/MBS3520	197.9	90.8	19.7	10.0	56.2	5.4	7.5	3	289	114
29	PUER5:N(LH61)(GEMN-0097)-SIB-109-001/MBS3520	195.5	89.7	17.4	11.2	55.1	1.9	0.0	8	302	118
25	PUER5:N(LH61)(GEMN-0097)-SIB-100-002/MBS3520	188.8	86.6	19.9	9.5	57.8	4.1	3.4	3	306	116
34	PUER5:N(LH61)(GEMN-0097)-SIB-116-002/MBS3520	186.3	85.5	19.9	9.4	56.9	2.0	6.6	7	305	126
27	PUER5:N(LH61)(GEMN-0097)-SIB-107-001/MBS3520	186.1	85.4	21.6	8.6	56.5	1.9	25.5	6	287	103
10	PUER5:N(LH61)(GEMN-0097)-SIB-021-001/MBS3520	183.7	84.3	19.8	9.3	56.1	3.0	15.9	5	306	122
28	PUER5:N(LH61)(GEMN-0097)-SIB-107-002/MBS3520	181.8	83.4	21.6	8.4	56.6	1.4	1.5	4	286	111
35	PUER5:N(LH61)(GEMN-0097)-SIB-118-001/MBS3520	181.6	83.3	18.5	9.8	56.4	3.7	1.4	4	309	123
21	PUER5:N(LH61)(GEMN-0097)-SIB-088-003/MBS3520	181.3	83.2	19.3	9.4	56.7	8.9	3.3	4	313	134
19	PUER5:N(LH61)(GEMN-0097)-SIB-088-001/MBS3520	180.9	83.0	17.5	10.3	57.8	2.1	2.4	5	299	119
3	PUER5:N(LH61)(GEMN-0097)-SIB-008-001/MBS3520	179.7	82.4	20.5	8.8	56.4	3.1	5.6	4	292	121
11	PUER5:N(LH61)(GEMN-0097)-SIB-022-001/MBS3520	178.6	81.9	20.6	8.7	55.2	2.1	0.0	4	304	109
Number Locations		5		5	5	4	3	2	1	2	2
Mean		173.6		19.3	9.0	56.1	2.7	5.0	5	295	115
Non Check Mean		169.3		19.2	8.8	56.1	2.8	5.5	5	296	115
Check Means		218.0		19.5	11.2	56.7	1.9	0.6	8	286	112
CV		13.2		5.0		1.4					
Yield Range		116.5 - 258.0									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Atlantic, and Keota in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714101

Tester: MBS2655

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
69	Pioneer 31D58	248.2	111.8	20.5	12.1	57.2	1.0	0.0	8	282	110
68	MBS3520/MBS8814	232.7	104.8	20.2	11.5	54.4	1.8	2.2	8	293	112
16	((LH57/CML373)/GEMN-0155)-SIB-037-001/MBS2655	221.1	99.5	21.3	10.4	55.7	4.6	0.0	6	280	118
72	Pioneer 31N27	219.0	98.6	20.7	10.6	58.2	0.4	14.0	7	282	102
70	Pioneer 33F85	213.9	96.3	19.6	10.9	56.9	1.5	0.8	8	282	107
67	MBS2655/MBS9508	212.5	95.7	17.7	12.0	57.9	1.4	0.7	8	278	110
53	((LH57/CML373)/GEMN-0155)-SIB-049-002/MBS3520	208.2	93.7	20.4	10.2	56.1	10.2	0.0	8	290	133
12	((LH57/CML373)/GEMN-0155)-SIB-019-001/MBS2655	206.7	93.1	19.9	10.4	55.9	1.8	20.3	8	285	95
48	((LH57/CML373)/GEMN-0155)-SIB-037-001/MBS3520	206.5	93.0	20.1	10.3	55.9	5.5	1.4	9	305	112
65	((LH57/CML373)/GEMN-0155)-SIB-098-001/MBS3520	206.0	92.8	18.0	11.4	55.5	1.0	0.0	8	283	98
20	((LH57/CML373)/GEMN-0155)-SIB-049-002/MBS2655	203.9	91.8	19.9	10.2	55.9	8.0	0.0	7	295	125
71	Pioneer 34R65	203.2	91.5	17.7	11.5	58.2	0.5	0.0	8	267	83
28	((LH57/CML373)/GEMN-0155)-SIB-091-002/MBS2655	201.7	90.8	18.5	10.9	55.5	5.5	0.0	7	273	112
25	((LH57/CML373)/GEMN-0155)-SIB-086-001/MBS2655	201.6	90.8	22.6	8.9	53.5	2.3	15.7	5	297	120
46	((LH57/CML373)/GEMN-0155)-SIB-030-001/MBS3520	200.4	90.2	20.6	9.7	55.6	0.0	10.7	5	273	102
59	((LH57/CML373)/GEMN-0155)-SIB-086-001/MBS3520	197.0	88.7	21.8	9.0	54.8	2.4	5.9	5	290	113
2	((LH57/CML373)/GEMN-0155)-SIB-005-001/MBS2655	196.6	88.5	21.1	9.3	55.3	13.5	14.0	6	298	135
6	((LH57/CML373)/GEMN-0155)-SIB-011-002/MBS2655	195.9	88.2	18.5	10.6	54.5	23.3	0.7	8	298	113
29	((LH57/CML373)/GEMN-0155)-SIB-098-001/MBS2655	193.6	87.2	18.2	10.6	54.1	9.2	3.4	8	292	112
35	((LH57/CML373)/GEMN-0155)-SIB-011-001/MBS3520	191.6	86.3	19.3	9.9	55.3	7.2	2.3	6	290	100
Number Locations		4		4	4	3	3	2	1	1	1
Mean		182.2		20.1	9.1	55.5	4.1	4.5	7	282	108
Non Check Mean		179.3		20.2	8.9	55.4	4.3	4.8	7	282	108
Check Means		222.1		19.2	11.6	56.9	1.2	0.7	8	280	104
CV		12.5		5.0		1.9					
Yield Range		138.4 - 248.2									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714102

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
70	Pioneer 31D58	229.6	107.8	20.2	11.4	57.9	3.9	0.0	9	300	112
71	Pioneer 33F85	218.5	102.6	19.1	11.4	57.3	8.6	0.0	8	292	117
69	MBS3520/MBS8814	218.2	102.5	19.3	11.3	53.5	6.4	0.0	8	310	122
68	MBS2655/MBS9508	209.4	98.4	17.9	11.7	58.3	3.3	0.0	8	292	103
47	((DJ7/CML373)/GEMS-0162)-071-002/MBS9451	201.9	94.8	20.3	9.9	56.3	2.0	0.0	6	297	120
46	((DJ7/CML373)/GEMS-0162)-071-001/MBS9451	199.2	93.6	20.3	9.8	56.9	3.8	1.4	7	322	130
7	((DJ7/CML373)/GEMS-0162)-029-001/MBS9451	198.8	93.4	18.5	10.7	55.9	1.8	0.0	8	300	130
60	((DJ7/CML373)/GEMS-0162)-113-001/MBS9451	198.8	93.4	19.3	10.3	56.7	0.5	0.0	8	290	112
56	((DJ7/CML373)/GEMS-0162)-109-001/MBS9451	197.6	92.8	19.1	10.3	57.6	6.5	7.7	5	318	120
13	((DJ7/CML373)/GEMS-0162)-035-001/MBS9451	194.8	91.5	19.7	9.9	56.2	7.1	1.4	5	300	120
61	((DJ7/CML373)/GEMS-0162)-125-001/MBS9451	194.0	91.1	19.9	9.7	57.5	5.2	0.0	8	293	127
25	((DJ7/CML373)/GEMS-0162)-049-001/MBS9451	193.9	91.1	20.5	9.5	57.7	3.9	2.2	6	307	123
22	((DJ7/CML373)/GEMS-0162)-042-001/MBS9451	193.6	90.9	18.6	10.4	56.5	2.0	1.4	5	315	117
50	((DJ7/CML373)/GEMS-0162)-079-001/MBS9451	192.5	90.4	19.5	9.9	57.3	4.4	2.1	7	293	115
9	((DJ7/CML373)/GEMS-0162)-032-001/MBS9451	191.3	89.9	20.6	9.3	56.8	1.0	0.0	5	298	127
8	((DJ7/CML373)/GEMS-0162)-029-002/MBS9451	190.8	89.6	17.8	10.7	57.3	2.3	2.0	5	267	113
54	((DJ7/CML373)/GEMS-0162)-099-001/MBS9451	188.8	88.7	19.2	9.8	58.1	7.6	0.0	6	313	117
72	Pioneer 34R65	188.7	88.6	17.6	10.7	58.6	0.0	0.0	8	282	90
14	((DJ7/CML373)/GEMS-0162)-035-002/MBS9451	188.2	88.4	19.8	9.5	55.9	6.2	5.2	6	295	110
20	((DJ7/CML373)/GEMS-0162)-040-002/MBS9451	188.1	88.4	21.5	8.7	56.8	2.8	0.7	5	295	112
Number Locations		5		5	5	2	3	2	1	1	1
Mean		180.8		19.9	9.1	56.8	3.6	2.2	7	298	115
Non Check Mean		178.4		20.0	8.9	56.8	3.6	2.4	6	298	115
Check Means		212.9		18.8	11.3	57.1	4.4	0.0	8	295	109
CV		10.3		4.9		0.9					
Yield Range		145.2 - 229.6									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714103

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
57	MBS3520/MBS8814	237.1	106.8	19.3	12.3	52.9	11.4	0.0	8	283	127
58	Pioneer 31D58	234.1	105.5	21.0	11.1	57.9	2.9	0.0	8	300	128
59	Pioneer 33F85	213.3	96.1	19.0	11.2	56.8	17.3	0.0	8	285	105
31	((DJ7/CML373)/GEMS-0162)-175-001/MBS9451	208.2	93.8	22.1	9.4	55.4	14.5	0.0	7	302	117
23	((DJ7/CML373)/GEMS-0162)-165-002/MBS9451	204.9	92.3	20.3	10.1	56.8	0.0	0.0	6	310	135
56	MBS2655/MBS9508	203.5	91.7	18.3	11.1	58.0	0.0	0.0	7	295	100
49	((DJ7/CML373)/GEMS-0162)-223-001/MBS9451	199.9	90.0	20.5	9.8	54.5	10.7	0.0	7	292	113
34	((DJ7/CML373)/GEMS-0162)-189-001/MBS9451	198.6	89.5	20.4	9.7	56.5	4.2	0.0	7	307	117
33	((DJ7/CML373)/GEMS-0162)-178-001/MBS9451	198.0	89.2	20.4	9.7	56.7	0.8	0.0	3	287	97
7	((DJ7/CML373)/GEMS-0162)-145-002/MBS9451	197.0	88.7	20.6	9.6	55.4	14.5	0.0	6	298	110
25	((DJ7/CML373)/GEMS-0162)-167-002/MBS9451	195.0	87.8	21.7	9.0	54.5	1.6	14.3	5	305	123
10	((DJ7/CML373)/GEMS-0162)-151-001/MBS9451	194.7	87.7	20.4	9.5	57.5	6.6	0.0	8	312	115
9	((DJ7/CML373)/GEMS-0162)-146-002/MBS9451	194.4	87.6	18.9	10.3	57.4	8.2	6.3	4	320	142
60	Pioneer 34R65	193.5	87.2	18.0	10.8	59.3	0.8	0.0	9	290	97
8	((DJ7/CML373)/GEMS-0162)-146-001/MBS9451	192.8	86.8	18.8	10.3	56.1	14.6	0.0	7	307	122
12	((DJ7/CML373)/GEMS-0162)-153-001/MBS9451	192.7	86.8	19.5	9.9	55.7	5.6	0.0	8	302	117
42	((DJ7/CML373)/GEMS-0162)-212-001/MBS9451	192.1	86.5	21.3	9.0	55.9	1.5	0.0	8	287	107
41	((DJ7/CML373)/GEMS-0162)-205-001/MBS9451	191.9	86.4	21.0	9.1	55.5	14.9	0.0	7	295	113
32	((DJ7/CML373)/GEMS-0162)-177-001/MBS9451	189.8	85.5	21.5	8.8	55.8	4.2	0.0	5	302	118
6	((DJ7/CML373)/GEMS-0162)-145-001/MBS9451	188.1	84.7	19.5	9.6	56.6	4.2	0.0	7	297	115
Number Locations		6		6	6	3	2	1	1	1	1
Mean		183.9		20.1	9.1	56.1	5.4	1.3	6	298	113
Non Check Mean		181.0		20.1	9.0	56.0	5.3	1.4	6	298	113
Check Means		222.0		19.4	11.4	57.0	6.5	0.0	8	291	111
CV		9.8		4.3		1.5					
Yield Range		152.4 - 237.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Farmersville, in Illinois

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714104

Tester: MBS8731

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
91	Pioneer 31D58	232.7	107.3	20.6	11.3	57.7	9.2	0.0	8	285	113
90	MBS3520/MBS8814	229.7	106.0	19.5	11.8	55.2	6.1	0.5	6	300	122
95	MBS2655/MBS8731	221.3	102.1	19.6	11.3	55.5	13.0	0.0	8	297	122
92	Pioneer 33F85	219.8	101.4	20.1	10.9	57.9	5.6	1.8	7	283	113
40	((PHB47/CML373)/GEMS-0162)-SIB-052-002/MBS8731	216.9	100.0	21.1	10.3	56.0	2.9	7.1	7	302	120
94	Pioneer 31N27	215.7	99.5	20.7	10.4	58.3	2.4	6.8	5	285	108
83	((PHB47/CML373)/GEMS-0162)-SIB-132-001/MBS8731	215.1	99.2	22.0	9.8	56.2	1.4	4.3	7	303	117
82	((PHB47/CML373)/GEMS-0162)-SIB-131-001/MBS8731	214.1	98.8	22.3	9.6	55.2	4.0	28.1	6	295	122
70	((PHB47/CML373)/GEMS-0162)-SIB-095-001/MBS8731	212.7	98.1	20.3	10.5	55.8	1.7	1.9	8	277	110
74	((PHB47/CML373)/GEMS-0162)-SIB-117-001/MBS8731	212.5	98.0	20.8	10.2	56.2	5.0	6.5	6	292	105
80	((PHB47/CML373)/GEMS-0162)-SIB-127-001/MBS8731	211.3	97.5	22.1	9.6	55.6	4.2	1.5	5	282	110
45	((PHB47/CML373)/GEMS-0162)-SIB-056-001/MBS8731	210.5	97.1	22.1	9.5	55.1	0.7	11.3	4	302	120
15	((PHB47/CML373)/GEMS-0162)-SIB-022-001/MBS8731	209.6	96.7	21.0	10.0	55.6	2.6	1.0	7	273	108
68	((PHB47/CML373)/GEMS-0162)-SIB-090-002/MBS8731	209.6	96.7	21.5	9.7	56.5	5.8	0.0	4	280	102
31	((PHB47/CML373)/GEMS-0162)-SIB-041-002/MBS8731	208.8	96.3	21.8	9.6	56.6	0.4	6.3	3	297	112
67	((PHB47/CML373)/GEMS-0162)-SIB-090-001/MBS8731	208.7	96.3	21.1	9.9	56.2	10.0	3.7	8	280	115
81	((PHB47/CML373)/GEMS-0162)-SIB-129-001/MBS8731	207.8	95.8	21.1	9.8	54.9	6.4	1.5	5	310	125
79	((PHB47/CML373)/GEMS-0162)-SIB-124-002/MBS8731	207.5	95.7	20.4	10.2	55.5	3.8	6.8	6	298	138
37	((PHB47/CML373)/GEMS-0162)-SIB-050-001/MBS8731	207.4	95.7	21.6	9.6	55.6	3.6	4.6	4	293	100
73	((PHB47/CML373)/GEMS-0162)-SIB-112-002/MBS8731	207.3	95.6	21.2	9.8	56.4	4.2	0.9	6	298	127
Number Locations		6		6	6	4	4	3	1	1	1
Mean		197.0		20.7	9.5	56.5	3.9	5.2	7	293	116
Non Check Mean		195.9		20.7	9.5	56.4	3.9	5.4	6	293	116
Check Means		216.8		19.4	11.2	57.6	5.4	2.2	7	288	114
CV		12.0		4.3		1.4	98	213			
Yield Range		155.1 - 232.7									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Tekamah in Nebraska

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714105

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
57	MBS3520/MBS8814	228.6	108.5	18.8	12.2	53.7	4.5	0.0	8	305	122
58	Pioneer 31D58	226.5	107.5	18.6	12.2	59.2	4.0	1.9	8	263	103
59	Pioneer 33F85	218.7	103.8	18.7	11.7	58.2	4.9	0.0	8	258	97
56	MBS2655/MBS9508	211.4	100.3	18.3	11.6	57.6	3.3	0.0	7	302	110
48	(GEMS-0115/CUBA164:T26aS41-B-040-B)-014-003/MBS9451	202.5	96.1	18.6	10.9	54.1	2.8	2.0	5	290	115
1	(GEMS-0115/CUBA164:T26aS41-B-040-B)-001-001/MBS9451	200.9	95.3	18.0	11.2	55.0	5.1	0.0	6	275	103
53	(GEMS-0115/CUBA164:T26aS41-B-040-B)-015-004/MBS9451	199.0	94.4	18.5	10.8	55.7	2.6	0.0	5	267	103
20	(GEMS-0115/CUBA164:T26aS41-B-040-B)-005-004/MBS9451	198.8	94.4	19.0	10.5	55.1	4.0	1.5	6	310	122
32	(GEMS-0115/CUBA164:T26aS41-B-040-B)-008-004/MBS9451	196.2	93.1	19.3	10.2	55.1	0.6	0.0	5	287	113
9	(GEMS-0115/CUBA164:T26aS41-B-040-B)-003-001/MBS9451	195.6	92.8	18.2	10.7	57.2	2.5	5.8	6	262	93
54	(GEMS-0115/CUBA164:T26aS41-B-040-B)-016-001/MBS9451	195.3	92.7	19.6	10.0	55.8	6.5	0.0	6	313	127
4	(GEMS-0115/CUBA164:T26aS41-B-040-B)-001-004/MBS9451	195.1	92.6	18.8	10.4	56.5	3.5	4.4	6	305	113
39	(GEMS-0115/CUBA164:T26aS41-B-040-B)-012-002/MBS9451	194.4	92.3	18.6	10.5	55.2	3.0	1.4	6	288	117
40	(GEMS-0115/CUBA164:T26aS41-B-040-B)-012-003/MBS9451	193.6	91.9	19.7	9.8	55.9	6.8	4.3	4	300	113
13	(GEMS-0115/CUBA164:T26aS41-B-040-B)-004-001/MBS9451	193.1	91.6	18.9	10.2	54.8	6.0	4.5	5	300	117
22	(GEMS-0115/CUBA164:T26aS41-B-040-B)-006-002/MBS9451	192.5	91.4	19.8	9.7	54.2	4.3	0.0	7	263	97
30	(GEMS-0115/CUBA164:T26aS41-B-040-B)-008-002/MBS9451	192.3	91.3	17.9	10.7	55.7	0.6	1.4	7	257	92
60	Pioneer 34R65	192.2	91.2	17.7	10.9	58.6	1.0	6.9	8	277	92
3	(GEMS-0115/CUBA164:T26aS41-B-040-B)-001-003/MBS9451	191.7	91.0	18.4	10.4	56.1	8.1	8.3	6	263	100
25	(GEMS-0115/CUBA164:T26aS41-B-040-B)-007-001/MBS9451	191.5	90.9	19.3	9.9	55.8	5.0	0.0	7	313	117
Number Locations		6		6	6	5	5	3	1	1	1
Mean		186.3		18.8	9.9	55.4	4.3	1.8	6	279	107
Non Check Mean		184.6		18.9	9.8	55.4	4.3	1.9	6	279	107
Check Means		210.7		18.3	11.5	56.6	3.5	1.8	8	281	105
CV		9.9		4.4		1.0					
Yield Range		162.2 - 228.6									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Elberfeld in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714106

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
58	Pioneer 33F85	222.3	106.4	19.5	11.4	57.8	1.5	0.0	7	238	107
60	Pioneer 31N27	217.8	104.2	20.0	10.9	58.5	2.0	11.2	6	262	102
55	MBS2655/MBS9508	216.7	103.7	17.1	12.7	59.1	0.8	0.0	7		
57	Pioneer 31D58	213.9	102.3	20.1	10.6	57.8	2.5	1.5	7	263	107
56	MBS3520/MBS8814	210.8	100.9	18.8	11.2	54.5	1.4	4.9	6	282	108
17	(GEMS-0115/CUBA164:T26aS41-B-040-B)-020-004/MBS9451	198.7	95.1	19.8	10.0	55.7	6.6	2.2	7	275	118
1	(GEMS-0115/CUBA164:T26aS41-B-040-B)-016-003/MBS9451	194.6	93.1	18.7	10.4	55.4	8.0	1.4	9	260	93
59	Pioneer 34R65	193.8	92.7	18.0	10.8	58.6	1.8	0.0	8	260	87
27	(GEMS-0115/CUBA164:T26aS41-B-040-B)-023-003/MBS9451	189.6	90.7	18.1	10.5	56.1	0.4	0.0	6	272	110
20	(GEMS-0115/CUBA164:T26aS41-B-040-B)-021-003/MBS9451	189.4	90.6	19.0	10.0	55.2	7.6	5.5	4	265	115
42	(GEMS-0115/CUBA164:T26aS41-B-040-B)-027-004/MBS9451	189.0	90.4	20.2	9.4	55.7	6.3	0.0	8	273	105
21	(GEMS-0115/CUBA164:T26aS41-B-040-B)-021-004/MBS9451	188.5	90.2	19.2	9.8	55.3	1.1	0.0	8	282	120
28	(GEMS-0115/CUBA164:T26aS41-B-040-B)-023-004/MBS9451	188.4	90.1	18.5	10.2	55.2	2.9	3.2	5	282	115
26	(GEMS-0115/CUBA164:T26aS41-B-040-B)-023-002/MBS9451	186.5	89.2	19.5	9.6	56.9	5.8	3.4	5	270	115
2	(GEMS-0115/CUBA164:T26aS41-B-040-B)-016-004/MBS9451	185.6	88.8	18.4	10.1	56.2	15.4	0.0	7	303	110
32	(GEMS-0115/CUBA164:T26aS41-B-040-B)-024-004/MBS9451	185.6	88.8	19.5	9.5	54.6	9.4	5.0	6	265	107
51	(GEMS-0115/CUBA164:T26aS41-B-040-B)-030-001/MBS9451	185.1	88.6	18.9	9.8	55.3	7.7	13.2	7	295	117
52	(GEMS-0115/CUBA164:T26aS41-B-040-B)-030-002/MBS9451	184.8	88.4	18.4	10.0	54.8	3.2	0.0	5	247	85
41	(GEMS-0115/CUBA164:T26aS41-B-040-B)-027-003/MBS9451	184.6	88.3	16.9	10.9	56.7	12.4	0.0	6		
14	(GEMS-0115/CUBA164:T26aS41-B-040-B)-020-001/MBS9451	184.5	88.3	18.7	9.9	55.6	1.1	8.6	6	247	93
Number Locations		6		6	6	5	4	2	1	1	1
Mean		180.4		18.8	9.6	55.6	5.8	2.7	6	267	105
Non Check Mean		178.7		18.9	9.5	55.5	6.2	2.8	6	267	105
Check Means		209.0		18.8	11.1	57.0	1.6	1.6	7	261	102
CV		9.7		4.6		1.5					
Yield Range		158.2 - 222.3									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Elberfeld in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714107

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
57	Pioneer 31D58	233.1	110.2	20.9	11.2	58.7	13.0	0.0	8	293	122
56	MBS3520/MBS8814	212.9	100.7	18.8	11.3	56.0	5.3	0.0	8	303	122
60	Pioneer 31N27	211.3	99.9	20.1	10.5	59.1	9.5	7.1	6	292	105
59	Pioneer 34R65	206.8	97.8	18.4	11.2	59.3	1.6	0.0	8	270	107
55	MBS2655/MBS9508	202.7	95.8	18.6	10.9	59.2	4.3	6.6	7	282	113
58	Pioneer 33F85	202.1	95.6	19.0	10.6	58.7	7.8	0.0	8	273	103
29	(GEMS-0162/PHP38)-010-001/MBS9451	198.2	93.7	20.7	9.6	56.9	1.9	0.0	8	288	97
45	(GEMS-0162/PHP38)-015-002/MBS9451	197.7	93.5	18.6	10.6	57.6	3.1	10.9	7	302	118
12	(GEMS-0162/PHP38)-004-003/MBS9451	196.3	92.8	19.4	10.1	58.3	1.1	0.0	7	297	107
20	(GEMS-0162/PHP38)-007-001/MBS9451	195.8	92.6	19.9	9.8	57.9	10.4	0.0	5	287	122
7	(GEMS-0162/PHP38)-003-002/MBS9451	195.4	92.4	20.5	9.5	58.2	1.5	0.0	7	287	98
53	(GEMS-0162/PHP38)-017-002/MBS9451	194.8	92.1	19.3	10.1	58.6	5.9	0.0	7	288	98
32	(GEMS-0162/PHP38)-010-004/MBS9451	193.7	91.6	19.9	9.7	58.2	2.6	0.0	8	287	97
47	(GEMS-0162/PHP38)-015-004/MBS9451	191.6	90.6	21.0	9.1	57.4	2.2	0.0	6	290	113
16	(GEMS-0162/PHP38)-005-003/MBS9451	190.6	90.1	19.1	10.0	58.4	2.8	0.0	9	300	107
34	(GEMS-0162/PHP38)-011-002/MBS9451	188.0	88.9	18.6	10.1	57.2	1.5	1.4	9	285	115
19	(GEMS-0162/PHP38)-006-002/MBS9451	187.9	88.8	18.7	10.0	58.1	10.4	1.6	8	277	108
14	(GEMS-0162/PHP38)-005-001/MBS9451	187.4	88.6	19.1	9.8	58.2	3.9	0.0	7	285	102
30	(GEMS-0162/PHP38)-010-002/MBS9451	185.5	87.7	19.4	9.6	58.3	3.0	0.0	9	293	110
17	(GEMS-0162/PHP38)-005-004/MBS9451	183.8	86.9	19.7	9.3	58.9	6.4	0.0	7	287	123
Number Locations		6		6	1.0	4	3	1	1	1	1
Mean		180.9		19.4	9.3	58.0	3.7	0.8	7	290	109
Non Check Mean		178.1		19.4	9.2	58.0	3.5	0.7	7	291	108
Check Means		211.5		19.1	11.1	58.4	6.4	1.3	8	284	113
CV		9.8		4.1		1.1	126.5				
Yield Range		156.3 - 233.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Tekamah in Nebraska

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714108

Tester: MBS9451

		All Location Means								
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
60	Pioneer 31N27	229.6	108.6	19.6	11.7	59.2	33.7	6	287	110
56	MBS3520/MBS8814	224.3	106.1	18.5	12.1	55.7	4.7	7	292	112
57	Pioneer 31D58	219.8	103.9	20.1	10.9	58.6	41.3	6	285	115
58	Pioneer 33F85	211.9	100.2	19.5	10.9	59.3	6.0	8	263	118
59	Pioneer 34R65	201.0	95.0	17.8	11.3	59.4	6.3	7	263	107
55	MBS2655/MBS9508	200.6	94.8	18.2	11.0	58.9	4.9	7	280	95
43	(GEMS-0162/PHP38)-030-001/MBS9451	196.8	93.0	20.6	9.6	58.7	2.1	8	290	112
20	(GEMS-0162/PHP38)-022-003/MBS9451	195.1	92.2	18.6	10.5	58.2	10.5	7	265	102
53	(GEMS-0162/PHP38)-034-003/MBS9451	193.0	91.3	20.1	9.6	56.9	3.8	7	310	115
37	(GEMS-0162/PHP38)-027-004/MBS9451	192.8	91.2	19.1	10.1	57.7	1.7	8	277	112
54	(GEMS-0162/PHP38)-034-004/MBS9451	192.0	90.8	19.1	10.1	57.1	0.0	9	268	122
24	(GEMS-0162/PHP38)-023-003/MBS9451	190.4	90.0	18.4	10.3	58.5	2.9	7	282	103
19	(GEMS-0162/PHP38)-022-002/MBS9451	188.9	89.3	18.9	10.0	57.0	0.7	9	285	98
35	(GEMS-0162/PHP38)-027-002/MBS9451	184.6	87.3	19.3	9.6	58.0	5.2	9	290	115
27	(GEMS-0162/PHP38)-024-002/MBS9451	184.4	87.2	19.2	9.6	58.2	13.2	7	288	100
50	(GEMS-0162/PHP38)-032-004/MBS9451	184.4	87.2	20.0	9.2	57.5	1.5	7	288	108
26	(GEMS-0162/PHP38)-024-001/MBS9451	183.8	86.9	18.5	9.9	57.8	2.9	7	283	113
12	(GEMS-0162/PHP38)-020-003/MBS9451	182.5	86.3	18.6	9.8	58.1	12.9	7	283	98
18	(GEMS-0162/PHP38)-022-001/MBS9451	181.9	86.0	19.0	9.6	57.7	5.6	7	293	102
45	(GEMS-0162/PHP38)-031-001/MBS9451	181.0	85.6	20.2	9.0	57.8	18.2	8	297	110
Number Locations		6		6	6	4	2	1	1	1
Mean		180.2		19.0	9.5	58.1	5.9	7	284	106
Non Check Mean		177.2		19.0	9.3	58.1	5.3	8	285	106
Check Means		211.5		18.8	11.3	58.3	12.6	7	277	109
CV		9.6		4.0		1.2				
Yield Range		154.9 - 229.6								

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Tekamah in Nebraska

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714109

Tester: MBS8731

		All Location Means								
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
91	(GEMS-0227/(GEMS-0162/PHP38))-054-002/MBS8731	239.4	116.2	19.5	12.3	55.6	4.5	8	303	102
66	(GEMS-0227/(GEMS-0162/PHP38))-040-001/MBS8731	233.4	113.3	20.2	11.6	56.6	5.4	8	288	112
93	(GEMS-0227/(GEMS-0162/PHP38))-055-002/MBS8731	232.8	113.0	18.8	12.4	55.3	9.0	8	288	98
96	(GEMS-0227/(GEMS-0162/PHP38))-057-002/MBS8731	232.7	113.0	17.4	13.4	56.4	1.1	8	305	105
100	(GEMS-0227/(GEMS-0162/PHP38))-060-001/MBS8731	231.6	112.4	19.4	11.9	57.1	2.8	9	310	107
7	(GEMS-0227/(GEMS-0162/PHP38))-005-002/MBS8731	230.1	111.7	20.7	11.1	54.9	6.1	8	318	133
49	(GEMS-0227/(GEMS-0162/PHP38))-031-001/MBS8731	227.6	110.5	20.3	11.2	58.3	6.5	7	312	108
80	(GEMS-0227/(GEMS-0162/PHP38))-047-001/MBS8731	225.6	109.5	19.4	11.6	56.1	2.3	9	302	108
94	(GEMS-0227/(GEMS-0162/PHP38))-056-001/MBS8731	225.5	109.5	20.9	10.8	56.5	6.7	8	307	112
89	(GEMS-0227/(GEMS-0162/PHP38))-052-002/MBS8731	225.1	109.3	19.3	11.7	56.8	5.3	7	310	108
70	(GEMS-0227/(GEMS-0162/PHP38))-042-001/MBS8731	224.6	109.0	20.0	11.2	56.2	0.0	7	283	103
11	(GEMS-0227/(GEMS-0162/PHP38))-008-001/MBS8731	222.9	108.2	19.9	11.2	56.3	3.3	8	312	112
71	(GEMS-0227/(GEMS-0162/PHP38))-042-002/MBS8731	221.6	107.6	20.3	10.9	57.0	2.1	7	297	95
81	(GEMS-0227/(GEMS-0162/PHP38))-047-002/MBS8731	221.6	107.6	20.4	10.9	55.9	1.9	9	293	115
90	(GEMS-0227/(GEMS-0162/PHP38))-054-001/MBS8731	221.6	107.6	18.7	11.9	53.8	1.4	9	283	85
60	(GEMS-0227/(GEMS-0162/PHP38))-036-002/MBS8731	221.4	107.5	19.8	11.2	56.5	6.4	8	302	122
95	(GEMS-0227/(GEMS-0162/PHP38))-057-001/MBS8731	220.6	107.1	19.0	11.6	55.9	0.4	9	280	100
10	(GEMS-0227/(GEMS-0162/PHP38))-007-002/MBS8731	219.8	106.7	18.9	11.6	56.9	15.6	9	292	108
88	(GEMS-0227/(GEMS-0162/PHP38))-052-001/MBS8731	219.3	106.5	20.1	10.9	56.4	2.8	8	300	103
45	(GEMS-0227/(GEMS-0162/PHP38))-029-001/MBS8731	219.2	106.4	19.6	11.2	56.5	11.8	9	303	105
Number Locations		6		6	6	3	4	1	1	1
Mean		211.7		19.6	10.8	56.6	4.8	8	299	109
Non Check Mean		212.0		19.6	10.8	56.6	4.9	8	300	108
Check Means		206.0		18.9	10.9	57.1	3.4	8	296	117
CV		8.6		4.2		1.4				
Yield Range		185.6 - 239.4								

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, and Mount Pleasant in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714110

Tester: MBS8731

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
69	MBS3520/MBS8814	243.1	110.2	19.0	12.8	52.7	4.7	0.0	7	300	133
15	(GEMS-0227/PHP38)-009-001/MBS8731	235.2	106.7	19.2	12.3	56.1	4.8	0.0	9	297	103
43	(GEMS-0227/PHP38)-025-001/MBS8731	234.4	106.3	18.8	12.5	56.1	7.3	3.0	9	303	112
33	(GEMS-0227/PHP38)-019-002/MBS8731	233.8	106.0	18.5	12.6	56.6	9.9	3.0	9	308	133
30	(GEMS-0227/PHP38)-018-001/MBS8731	232.9	105.6	18.9	12.3	55.8	7.0	2.5	8	288	112
44	(GEMS-0227/PHP38)-025-002/MBS8731	232.1	105.3	19.3	12.0	56.8	5.2	0.0	9	307	105
31	(GEMS-0227/PHP38)-018-002/MBS8731	231.7	105.1	18.4	12.6	54.6	4.7	3.5	8	285	110
40	(GEMS-0227/PHP38)-023-002/MBS8731	231.6	105.0	19.3	12.0	56.2	4.4	0.0	9	310	112
70	Pioneer 31D58	231.1	104.8	19.7	11.7	56.9	8.6	0.0	8	287	118
48	(GEMS-0227/PHP38)-028-001/MBS8731	229.0	103.9	19.8	11.6	55.6	8.4	4.5	8	307	122
20	(GEMS-0227/PHP38)-011-002/MBS8731	228.8	103.8	18.3	12.5	56.6	8.7	1.5	9	287	107
53	(GEMS-0227/PHP38)-031-002/MBS8731	228.6	103.7	19.0	12.0	54.6	2.4	0.0	9	298	117
28	(GEMS-0227/PHP38)-017-001/MBS8731	228.2	103.5	19.0	12.0	55.2	1.1	0.0	9	303	110
32	(GEMS-0227/PHP38)-019-001/MBS8731	226.7	102.8	19.8	11.4	56.0	7.4	1.0	8	310	113
65	(GEMS-0227/PHP38)-037-002/MBS8731	226.1	102.5	18.5	12.2	56.5	9.0	0.0	8	303	113
27	(GEMS-0227/PHP38)-016-002/MBS8731	225.6	102.3	19.4	11.6	55.3	3.9	0.0	8	295	110
58	(GEMS-0227/PHP38)-034-001/MBS8731	225.6	102.3	19.2	11.8	55.8	3.2	5.6	8	307	112
13	(GEMS-0227/PHP38)-007-002/MBS8731	224.9	102.0	19.8	11.4	55.7	4.8	5.1	8	297	108
60	(GEMS-0227/PHP38)-035-001/MBS8731	224.8	102.0	19.0	11.8	57.3	4.7	1.5	8	275	105
39	(GEMS-0227/PHP38)-023-001/MBS8731	224.4	101.8	19.1	11.7	56.8	6.2	0.0	8	300	105
Number Locations		6		6	6	2	3	3	1	1	1
Mean		217.5		19.0	11.4	55.9	5.2	2.0	8	295	109
Non Check Mean		217.3		19.0	11.4	55.8	5.2	1.6	9	296	109
Check Means		220.5		18.8	11.7	56.5	4.8	6.8	7	290	112
CV		7.3		4.2		1.6					
Yield Range		193.7 - 243.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Vigo in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1714111

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
101	Pioneer 31D58	221.4	109.4	21.0	10.5	57.5	10.0	0.0	7	277	113
105	Pioneer P1151	205.9	101.8	18.9	10.9	56.5	1.5	0.0	7	263	92
106	MBS2655/MBS8731	203.6	100.6	18.8	10.8	53.2	2.6	0.0	5	292	120
100	MBS3520/MBS8814	201.9	99.8	19.3	10.5	53.5	3.9	1.9	5	303	122
13	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-024-001/MBS9451	200.4	99.1	19.2	10.4	54.5	12.1	0.0	7	287	103
102	Pioneer 33F85	199.4	98.6	20.3	9.8	57.2	4.5	2.3	7	277	100
9	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-014-001/MBS9451	196.2	97.0	18.7	10.5	54.3	2.0	0.4	6	292	98
28	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-059-001/MBS9451	195.4	96.6	20.5	9.5	52.9	6.4	2.0	4	292	97
31	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-062-001/MBS9451	194.2	96.0	18.2	10.7	54.3	20.3	8.8	7	283	107
99	MBS2655/MBS9508	192.3	95.1	19.2	10.0	57.7	4.2	0.0	7	273	100
104	Pioneer 31N27	191.2	94.5	21.3	9.0	58.3	10.8	5.1	4	287	110
57	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-157-001/MBS9451	190.7	94.3	17.6	10.8	55.1	11.9	2.3	4	280	107
20	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-042-002/MBS9451	189.0	93.4	20.1	9.4	55.4	2.5	0.9	5	282	115
30	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-061-001/MBS9451	186.8	92.3	18.5	10.1	54.3	8.4	8.1	8	277	113
56	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-153-001/MBS9451	186.8	92.3	18.5	10.1	51.7	4.1	4.3	8	280	105
103	Pioneer 34R65	186.5	92.2	18.6	10.0	58.5	0.4	0.0	8	277	93
47	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-134-001/MBS9451	185.7	91.8	19.4	9.6	52.8	16.9	2.5	6	278	115
49	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-135-001/MBS9451	185.7	91.8	19.5	9.5	51.7	12.1	9.1	5	285	122
37	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-067-001/MBS9451	185.2	91.5	20.2	9.2	55.0	8.3	2.5	5	272	95
17	(GEMS-0227/(Mp494/GEMS-0002)-001-002-001-001)-SIB-033-002/MBS9451	184.9	91.4	17.6	10.5	54.4	6.5	8.1	4	272	113
Number Locations		6		6	6	4	4	3	1	1	1
Mean		169.6		18.8	9.0	54.5	5.7	5.1	5	286	107
Non Check Mean		168.3		18.8	9.0	54.5	5.7	5.3	5	286	107
Check Means		202.3		19.8	10.2	56.6	4.6	0.8	7	281	106
CV		12.5		6.1		1.6					
Yield Range		99.6 - 221.4									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Greensburg in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1754101

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
56	Pioneer 31D58	229.8	109.4	19.8	11.6	59.0	0.9	0.0	8	283	117
59	Pioneer 31N27	218.9	104.2	20.2	10.8	59.9	6.1	11.8	7	280	107
57	Pioneer 33F85	211.1	100.5	19.6	10.8	58.5	6.5	0.0	9	300	105
19	((LH195/KO679Y)/GEMS-0227)-013-001/MBS9451	205.6	97.9	18.3	11.2	56.2	0.5	0.0	5	275	115
28	((LH195/KO679Y)/GEMS-0227)-017-002/MBS9451	205.4	97.8	18.1	11.3	56.8	0.9	0.0	7	307	107
55	MBS3520/MBS8814	204.7	97.5	18.7	10.9	54.2	5.1	0.0	7	287	115
37	((LH195/KO679Y)/GEMS-0227)-022-001/MBS9451	203.2	96.8	20.0	10.2	56.5	5.9	40.0	7	308	101
32	((LH195/KO679Y)/GEMS-0227)-019-002/MBS9451	203.1	96.7	19.7	10.3	57.5	3.2	0.0	6	290	108
58	Pioneer 34R65	202.8	96.6	17.7	11.5	59.4	1.8	0.0	8	280	95
54	MBS2655/MBS9508	201.5	96.0	18.2	11.1	58.7	1.4	0.0	8	285	98
13	((LH195/KO679Y)/GEMS-0227)-010-001/MBS9451	200.4	95.4	19.1	10.5	56.5	3.8	0.0	5	295	117
50	((LH195/KO679Y)/GEMS-0227)-031-001/MBS9451	199.0	94.8	18.4	10.8	55.6	2.8	0.0	9	280	110
39	((LH195/KO679Y)/GEMS-0227)-023-001/MBS9451	198.5	94.5	17.8	11.2	55.8	6.8	22.6	6	313	123
2	((LH195/KO679Y)/GEMS-0227)-001-002/MBS9451	198.3	94.4	20.5	9.7	57.4	4.9	1.4	5	298	115
30	((LH195/KO679Y)/GEMS-0227)-018-002/MBS9451	198.0	94.3	19.7	10.1	56.6	15.8	1.5	8	287	97
16	((LH195/KO679Y)/GEMS-0227)-011-002/MBS9451	197.6	94.1	18.8	10.5	56.2	6.4	15.8	4	295	118
27	((LH195/KO679Y)/GEMS-0227)-017-001/MBS9451	197.5	94.0	18.1	10.9	57.4	11.9	0.0	8	293	120
3	((LH195/KO679Y)/GEMS-0227)-002-001/MBS9451	196.1	93.4	18.0	10.9	56.9	27.2	0.0	5	288	98
11	((LH195/KO679Y)/GEMS-0227)-009-001/MBS9451	195.8	93.2	18.1	10.8	56.4	2.9	0.0	6	275	93
42	((LH195/KO679Y)/GEMS-0227)-027-001/MBS9451	195.5	93.1	19.3	10.1	56.2	5.0	0.0	7	293	95
Number Locations		5		5	5	3	3	1	1	1	1
Mean		188.3		18.8	10.0	56.6	7.1	2.5	7	289	105
Non Check Mean		186.1		18.8	9.9	56.4	7.4	2.7	6	289	105
Check Means		210.0		18.8	11.2	58.0	3.1	0.0	8	287	106
CV		8.8		4.8		1.1					
Yield Range		158.4 - 229.8									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Carroll in Iowa; and Elberfeld in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1754102

Tester: MBS3520

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
34	MBS2655/MBS8731	235.0	111.3	18.7	12.6	55.6	7.0	0.4	8	305	127
29	Pioneer 31D58	231.4	109.6	19.2	12.1	59.6	2.2	0.0	9	272	103
32	Pioneer 31N27	223.2	105.7	19.3	11.6	59.7	6.5	3.5	7	293	118
30	Pioneer 33F85	219.3	103.8	18.5	11.9	59.0	5.4	0.4	8	297	112
28	MBS3520/MBS8814	215.8	102.2	19.0	11.4	54.9	6.5	0.0	6	310	120
33	Pioneer P1151	206.0	97.5	17.8	11.6	58.2	7.6	0.0	9	273	103
9	(3IIH6 /(GEMN-0173/KO679Y))-002-001/MBS3520	205.5	97.3	17.5	11.7	55.8	11.0	4.2	4	318	145
35	MBS2655/MBS9451	201.5	95.4	17.2	11.7	55.7	11.3	0.7	6	303	120
36	MBS3520/MBS9451	200.3	94.8	18.2	11.0	56.0	2.8	1.7	7	303	108
31	Pioneer 34R65	199.7	94.6	16.7	12.0	60.2	5.1	0.0	8	255	110
16	(3IIH6 /(GEMN-0173/KO679Y))-003-003/MBS3520	198.4	93.9	17.2	11.5	56.4	1.5	5.3	5	302	122
3	(3IIH6 /(GEMN-0173/KO679Y))-001-002/MBS3520	196.2	92.9	17.1	11.5	56.4	11.0	2.8	5	297	130
5	(3IIH6 /(GEMN-0173/KO679Y))-001-004/MBS3520	194.4	92.0	17.7	11.0	55.5	5.5	1.1	3	310	127
27	MBS2655/MBS9508	190.1	90.0	17.4	10.9	59.2	2.6	1.9	6	287	105
1	(3IIH6 /(GEMN-0173/KO679Y))-001-001/MBS3520	188.9	89.4	16.3	11.6	56.3	8.9	6.4	5	293	120
26	(3IIH6 /(GEMN-0173/KO679Y))-005-002/MBS3520	184.9	87.5	17.4	10.6	57.3	9.8	7.1	6	320	147
13	(3IIH6 /(GEMN-0173/KO679Y))-003-001/MBS3520	183.2	86.7	16.3	11.2	55.8	2.0	0.7	7	290	115
4	(3IIH6 /(GEMN-0173/KO679Y))-001-003/MBS3520	182.0	86.2	17.6	10.3	57.1	15.0	21.4	5	327	138
6	(3IIH6 /(GEMN-0173/KO679Y))-001-005/MBS3520	180.0	85.2	16.7	10.8	57.3	8.7	11.3	5	297	125
2	(3IIH6 /(GEMN-0173/KO679Y))-001-001/MBS3520	178.9	84.7	17.0	10.5	56.5	7.2	4.2	4	313	130
Number Locations		6		6	6	4	5	4	1	1	1
Mean		187.1		17.6	10.6	56.9	7.2	4.9	6	303	126
Non Check Mean		183.2		17.5	10.5	56.6	7.6	5.7	6	306	128
Check Means		211.2		18.2	11.6	58.6	4.4	0.5	7	284	110
CV		11.0		5.1		1.0					
Yield Range		162.9 - 235.0									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and St. Joseph in Missouri

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1754103

Tester: MBS8731

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
30	Pioneer 31D58	237.1	113.1	18.8	12.6	58.8	3.1	0.0		282	107
29	MBS3520/MBS8814	227.7	108.6	18.1	12.6	54.3	0.8	1.5	8	288	107
34	MBS2655/MBS8731	224.7	107.2	18.8	12.0	54.1	9.2	0.0	8	280	103
31	Pioneer 33F85	224.0	106.9	18.7	12.0	57.9	3.4	1.5	9	287	100
33	Pioneer 31N27	214.1	102.1	19.1	11.2	59.3	6.9	14.3	7	270	102
28	MBS2655/MBS9508	208.7	99.6	14.9	14.0	59.2	3.5	9.1	5	272	102
8	(3IIH6 /(GEMN-0173/KO679Y))-002-001/MBS8731	193.7	92.4	16.7	11.6	55.4	15.9	1.5	6	280	137
27	(3IIH6 /(GEMN-0173/KO679Y))-005-002/MBS8731	189.5	90.4	18.1	10.5	56.6	8.3	5.7	7	305	133
36	MBS3520/MBS9451	188.8	90.1	17.9	10.5	55.4	2.4	1.4	7	285	85
3	(3IIH6 /(GEMN-0173/KO679Y))-001-002/MBS8731	185.8	88.6	15.7	11.8	56.0	9.4	1.5	8	267	115
1	(3IIH6 /(GEMN-0173/KO679Y))-001-001/MBS8731	184.7	88.1	17.2	10.7	55.3	1.8	0.0	9	293	125
5	(3IIH6 /(GEMN-0173/KO679Y))-001-004/MBS8731	184.2	87.9	16.8	11.0	55.6	2.1	0.0	8	273	127
19	(3IIH6 /(GEMN-0173/KO679Y))-004-002/MBS8731	183.8	87.7	19.0	9.7	55.6	12.5	0.0	7	293	125
23	(3IIH6 /(GEMN-0173/KO679Y))-004-004/MBS8731	183.1	87.4	18.7	9.8	55.5	19.6	14.2	6	295	137
6	(3IIH6 /(GEMN-0173/KO679Y))-001-005/MBS8731	182.2	86.9	16.6	11.0	56.5	12.7	0.0	8	280	120
26	(3IIH6 /(GEMN-0173/KO679Y))-005-002/MBS8731	182.0	86.8	19.1	9.5	56.1	5.2	0.0	8	317	147
4	(3IIH6 /(GEMN-0173/KO679Y))-001-003/MBS8731	180.1	85.9	17.4	10.4	55.5	6.6	0.7	7	270	117
24	(3IIH6 /(GEMN-0173/KO679Y))-005-001/MBS8731	177.2	84.5	18.1	9.8	57.5	4.5	0.0	8	295	113
32	Pioneer 34R65	177.2	84.5	17.2	10.3	58.9	12.5	0.0	7	258	95
12	(3IIH6 /(GEMN-0173/KO679Y))-003-001/MBS8731	177.1	84.5	18.8	9.4	56.1	2.4	0.0	8	263	102
Number Locations		6		6	6	5	5	2	1	1	1
Mean		183.1		17.9	10.2	56.0	8.0	2.5	7	282	117
Non Check Mean		180.0		17.9	10.1	55.8	8.6	2.5	7	282	120
Check Means		209.6		18.0	11.6	57.5	4.6	2.4	7	277	102
CV		10.7		5.0		1.4					
Yield Range		155.3 - 237.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and St. Joseph in Missouri

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1754104

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
69	Pioneer 31D58	237.1	111.1	21.1	11.2	58.1	0.0	0.0	8	287	113
70	Pioneer 33F85	219.9	103.0	19.9	11.1	57.6	2.9	0.0	9	275	115
68	MBS3520/MBS8814	211.9	99.3	20.0	10.6	53.0	5.6	0.0	8	272	112
12	(LH195/KO679Y)-005-003/MBS9451	205.5	96.3	21.5	9.6	56.5	22.2	7.1	6	292	113
71	Pioneer 34R65	200.1	93.8	19.8	10.1	58.6	2.2	4.7	9	260	93
67	MBS2655/MBS9508	197.9	92.7	18.4	10.8	58.4	0.0	0.0	6	292	98
41	(LH195/KO679Y)-015-002/MBS9451	195.6	91.7	22.0	8.9	56.0	16.2	11.1	7	282	112
3	(LH195/KO679Y)-002-003/MBS9451	194.2	91.0	21.2	9.2	55.6	5.5	26.5	7	273	113
72	MBS2655/MBS9451	192.2	90.1	19.0	10.1	54.0	10.8	1.5	6	285	105
34	(LH195/KO679Y)-013-001/MBS9451	191.9	89.9	20.9	9.2	54.6	27.5	0.0	6	275	117
25	(LH195/KO679Y)-010-001/MBS9451	189.7	88.9	22.0	8.6	55.6	8.2	58.3	5	263	100
19	(LH195/KO679Y)-008-001/MBS9451	188.4	88.3	21.1	8.9	55.0	3.9	1.3	6	277	112
16	(LH195/KO679Y)-007-001/MBS9451	187.5	87.9	20.2	9.3	55.5	9.6	8.3	6	270	103
24	(LH195/KO679Y)-009-003/MBS9451	187.5	87.9	22.3	8.4	55.7	8.4	0.0	8	287	123
7	(LH195/KO679Y)-004-001/MBS9451	187.4	87.8	22.0	8.5	54.9	7.2	0.0	5	265	112
11	(LH195/KO679Y)-005-002/MBS9451	186.7	87.5	21.5	8.7	54.3	8.8	4.1	8	283	112
43	(LH195/KO679Y)-016-001/MBS9451	186.4	87.3	21.3	8.8	56.5	10.7	0.0	7	263	112
35	(LH195/KO679Y)-013-002/MBS9451	185.8	87.1	21.3	8.7	54.9	6.9	0.0	4	270	113
53	(LH195/KO679Y)-019-002/MBS9451	185.6	87.0	21.5	8.6	56.5	10.4	47.1	5	253	105
18	(LH195/KO679Y)-007-003/MBS9451	185.5	86.9	21.7	8.5	55.1	16.2	19.1	6	282	108
Number Locations		4		4	4	2	2	1	1	1	1
Mean		179.5		21.4	8.4	55.7	9.0	4.9	7	273	108
Non Check Mean		176.8		21.5	8.2	55.6	9.5	5.2	6	272	108
Check Means		213.4		19.8	10.8	57.1	2.1	0.9	8	277	106
CV		8.6		4.1		1.5					
Yield Range		148.4 - 237.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Carroll in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1754105

Tester: MBS9451

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
93	MBS3520/MBS8814	235.1	112.8	18.8	12.5	54.4	3.4	0.0	6	295	122
94	Pioneer 31D58	223.3	107.1	19.0	11.8	58.3	4.9	6.8	9	273	110
95	Pioneer 33F85	211.2	101.3	19.2	11.0	57.8	5.7	0.0	8	257	102
14	(GEMS-0227/(LH195/KO679Y))-008-001/MBS9451	208.7	100.1	20.5	10.2	55.8	13.9	0.0	7	267	115
59	(GEMS-0227/(LH195/KO679Y))-038-002/MBS9451	203.5	97.6	19.5	10.4	57.5	11.2	0.0	7	317	133
12	(GEMS-0227/(LH195/KO679Y))-007-001/MBS9451	202.0	96.9	19.7	10.3	55.6	2.8	0.0	8	287	113
55	(GEMS-0227/(LH195/KO679Y))-036-002/MBS9451	202.0	96.9	18.5	10.9	56.0	12.1	4.7	7	317	120
28	(GEMS-0227/(LH195/KO679Y))-018-001/MBS9451	197.2	94.6	18.3	10.8	55.6	7.0	1.7	7	273	98
52	(GEMS-0227/(LH195/KO679Y))-035-001/MBS9451	194.8	93.5	20.1	9.7	55.3	2.2	0.0	6	303	97
29	(GEMS-0227/(LH195/KO679Y))-018-002/MBS9451	193.1	92.7	18.4	10.5	55.0	0.0	0.0	8	263	95
19	(GEMS-0227/(LH195/KO679Y))-011-002/MBS9451	192.7	92.5	18.7	10.3	56.8	5.1	0.0	9	277	90
58	(GEMS-0227/(LH195/KO679Y))-038-001/MBS9451	191.9	92.1	19.7	9.7	57.2	7.7	0.0	8	273	110
20	(GEMS-0227/(LH195/KO679Y))-012-001/MBS9451	190.4	91.4	19.7	9.7	55.0	3.0	0.0	8	295	103
64	(GEMS-0227/(LH195/KO679Y))-041-001/MBS9451	189.6	91.0	20.2	9.4	56.7	13.1	0.0	7	297	125
48	(GEMS-0227/(LH195/KO679Y))-033-001/MBS9451	187.4	89.9	20.2	9.3	55.3	14.2	1.6	8	293	113
43	(GEMS-0227/(LH195/KO679Y))-029-002/MBS9451	187.1	89.8	19.1	9.8	56.5	4.3	0.0	6	290	110
92	MBS2655/MBS9508	186.9	89.7	18.2	10.3	58.2	2.5	7.9	6	277	105
84	(GEMS-0227/(LH195/KO679Y))-055-001/MBS9451	186.5	89.5	18.1	10.3	56.4	15.5	0.0	5	297	115
8	(GEMS-0227/(LH195/KO679Y))-005-001/MBS9451	186.4	89.4	19.1	9.8	55.5	12.1	0.0	7	290	112
69	(GEMS-0227/(LH195/KO679Y))-047-002/MBS9451	186.1	89.3	19.8	9.4	56.6	1.6	0.0	6	290	125
Number Locations		5		5	5	3	2	1	1	1	1
Mean		173.9		19.1	9.1	56.2	5.4	0.9	7	283	106
Non Check Mean		171.9		19.1	9.0	56.1	5.5	0.8	7	283	105
Check Means		208.4		18.7	11.1	57.6	3.3	2.9	8	272	110
CV		12.0		4.6		1.2					
Yield Range		129.6 - 235.1									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764101

Tester: MBS3520

		All Location Means									
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>
34	Pioneer 31D58	228.9	109.4	20.0	11.4	58.3	2.1	0.0	9	280	103
35	Pioneer 33F85	215.9	103.2	20.1	10.7	57.6	1.7	0.0	7	265	102
33	MBS3520/MBS8814	215.7	103.1	19.2	11.2	53.5	2.1	3.1	7	285	107
32	MBS2655/MBS9508	194.0	92.7	18.3	10.6	58.3	3.4	38.9	7	270	97
36	Pioneer 34R65	192.1	91.8	18.0	10.7	58.7	0.0	0.0	9	270	88
31	(GEMN-0192/MSU 1)-SIB-071-001/MBS3520	188.9	90.3	19.7	9.6	56.2	3.5	5.6	8	282	120
1	(GEMN-0192/MSU 1)-SIB-002-001/MBS2655	187.6	89.6	18.6	10.1	57.2	5.1	0.0	8	278	100
4	(GEMN-0192/MSU 1)-SIB-009-001/MBS2655	185.5	88.6	20.1	9.2	55.8	6.4	0.0	7	282	118
15	(GEMN-0192/MSU 1)-SIB-004-002/MBS3520	182.7	87.3	18.3	10.0	55.0	5.0	12.9	7	270	102
14	(GEMN-0192/MSU 1)-SIB-002-001/MBS3520	177.9	85.0	18.7	9.5	57.5	4.4	0.0	7	277	107
5	(GEMN-0192/MSU 1)-SIB-011-001/MBS2655	177.5	84.8	19.2	9.2	56.4	5.3	0.0	8	300	118
24	(GEMN-0192/MSU 1)-SIB-040-001/MBS3520	173.8	83.0	20.4	8.5	55.7	10.6	0.0	7	277	108
30	(GEMN-0192/MSU 1)-SIB-060-002/MBS3520	173.0	82.7	17.9	9.7	56.8	3.5	19.4	7	290	120
17	(GEMN-0192/MSU 1)-SIB-008-002/MBS3520	171.8	82.1	18.1	9.5	53.1	2.1	0.0	9	290	107
3	(GEMN-0192/MSU 1)-SIB-008-002/MBS2655	167.6	80.1	18.8	8.9	53.9	2.9	1.7	9	297	112
13	(GEMN-0192/MSU 1)-SIB-071-001/MBS2655	167.4	80.0	20.1	8.3	55.1	12.9	2.8	8	282	120
29	(GEMN-0192/MSU 1)-SIB-060-001/MBS3520	166.2	79.4	18.7	8.9	55.8	7.9	0.0	7	287	105
9	(GEMN-0192/MSU 1)-SIB-050-001/MBS2655	165.3	79.0	19.0	8.7	57.3	12.1	11.8	9	308	120
10	(GEMN-0192/MSU 1)-SIB-053-001/MBS2655	161.9	77.4	18.6	8.7	55.1	3.5	0.0	7	262	108
26	(GEMN-0192/MSU 1)-SIB-050-001/MBS3520	161.5	77.2	18.4	8.8	56.3	7.1	11.4	7	293	115
Number Locations		5		5	5	4	4	1	1	1	1
Mean		167.4		19.2	8.7	56.2	4.3	6.3	8	285	111
Non Check Mean		159.6		19.2	8.3	56.0	4.7	5.9	8	286	113
Check Means		209.3		19.1	11.0	57.3	1.9	8.4	8	274	99
CV		14.9		5.1		1.4					
Yield Range		111.4 - 228.9									

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Carroll in Iowa; and Elberfeld in Indiana

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764201

Tester: MBS2655

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
45	MBS3520/MBS8814	228.1	110.2	18.6	12.3	54.6	2.0	12.9	7	301	119	20
46	Pioneer 31D58	217.0	104.9	18.8	11.5	58.5	5.1	1.9	8	285	124	0
38	SX2788:N(LH82)(ANTIG03:N1242-B-007-B)-SIB-030/MBS2655	216.1	104.4	18.3	11.8	57.8	13.1	0.0	7	283	107	0
37	SX2788:N(LH82)(ANTIG03:N1242-B-007-B)-SIB-023/MBS2655	209.6	101.3	17.8	11.8	57.6	2.8	0.0	8	264	99	0
13	ATL100:N(LH82)(GEMN-0097)-041/MBS2655	201.9	97.6	16.8	12.0	56.9	4.5	1.5	7	296	123	1
48	Pioneer 34R65	198.9	96.1	17.5	11.4	59.4	0.2	0.0	8	284	95	6
47	Pioneer 33F85	197.0	95.2	18.9	10.4	58.3	12.8	0.4	6	285	114	1
29	BR51039:N1512-B-172/MBS2655	195.3	94.4	19.0	10.3	58.5	6.1	18.6	5	294	128	0
7	ATL100:N(LH82)(GEMN-0097)-025/MBS2655	194.8	94.2	19.1	10.2	57.0	7.9	5.0	6	298	124	8
15	ATL100:N(LH82)(GEMN-0097)-052/MBS2655	194.5	94.0	18.0	10.8	57.9	20.5	0.0	7	290	124	3
2	ATL100:N(LH82)(GEMN-0097)-006/MBS2655	194.3	93.9	17.7	11.0	57.7	11.9	0.9	7	291	127	5
44	MBS2655/MBS9508	193.7	93.6	17.4	11.1	58.6	6.1	3.8	5	287	111	0
33	SX2788:N(LH82)(ANTIG03:N1242-B-007-B)-SIB-016/MBS2655	193.2	93.4	19.0	10.2	56.9	8.2	5.3	7	297	124	2
14	ATL100:N(LH82)(GEMN-0097)-043/MBS2655	190.4	92.0	18.9	10.1	56.3	9.7	2.3	7	290	128	11
21	ATL100:N(LH82)(GEMN-0097)-066/MBS2655	188.0	90.9	18.7	10.1	56.6	17.9	4.0	7	293	124	6
39	SX2788:N(LH82)(ANTIG03:N1242-B-007-B)-SIB-045/MBS2655	187.7	90.7	20.6	9.1	57.4	5.0	39.6	3	286	124	0
3	ATL100:N(LH82)(GEMN-0097)-008/MBS2655	186.9	90.3	19.4	9.6	57.9	11.8	3.6	6	304	130	5
4	ATL100:N(LH82)(GEMN-0097)-013/MBS2655	186.8	90.3	19.3	9.7	56.8	9.1	5.4	6	287	120	3
9	ATL100:N(LH82)(GEMN-0097)-029/MBS2655	184.4	89.1	19.1	9.7	56.2	12.6	1.5	7	290	122	6
11	ATL100:N(LH82)(GEMN-0097)-038/MBS2655	184.1	89.0	17.4	10.6	58.3	5.4	4.6	6	294	129	1
Number Locations		8		8	8	7	7	3	1	2	2	1
Mean		182.8		18.7	9.8	57.6	11.4	7.8	7	289	123	3.9
Non Check Mean		179.7		18.7	9.6	57.6	12.1	8.3	7	289	124	3.8
Check Means		206.9		18.2	11.4	57.9	5.3	3.8	7	288	113	5.4
CV		11.1		4.7		1.4						
Yield Range		137.5 - 228.1										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, and Keota in Iowa; Elberfeld in Indiana; and Tekamah in Nebraska

Entry New GEM Code

13 GEMN-0302

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764202

Tester: MBS2655

		All Location Means										
<i>Entry</i>	<i>Pedigree</i>	<i>Yield B/A</i>	<i>% Yield /CHK</i>	<i>% Moist</i>	<i>Yield/ Moist</i>	<i>TWT</i>	<i>% S.L.</i>	<i>Late % R.L.</i>	<i>Early R.L. Rating</i>	<i>Plant Height</i>	<i>Ear Height</i>	<i>Green Snap (count)</i>
33	Pioneer 31D58	241.1	111.2	20.7	11.6	58.1	3.7	2.4	9	294	115	0
34	Pioneer 33F85	225.5	104.0	19.8	11.4	57.9	5.6	0.0	8	286	119	0
32	MBS3520/MBS8814	215.2	99.2	19.8	10.9	54.2	7.4	2.8	6	246	117	11
36	Pioneer 31N27	209.7	96.7	20.9	10.0	58.3	13.7	1.4	6	287	109	0
31	MBS2655/MBS9508	203.8	94.0	18.4	11.1	58.0	3.0	5.2	5	297	114	0
35	Pioneer 34R65	199.1	91.8	18.4	10.8	59.1	2.1	1.3	8	279	92	6
1	(GEMN-0140/GEMN-0097)-B-B-054-B/MBS2655	191.4	88.2	19.0	10.1	54.8	6.8	5.8	6	292	122	16
30	MDI022:N(PHG35)(GEMN-0097)-044-001-B/MBS2655	189.2	87.2	18.5	10.2	56.6	7.2	6.7	5	305	119	0
11	(M024-001/GEMN-0097)-B-B-057/MBS2655	188.1	86.7	19.1	9.8	55.5	4.2	2.6	7	267	101	3
13	Ki21:N(SG17)(LH162)-046-001/MBS2655	180.6	83.3	19.0	9.5	57.7	4.0	2.9	8	294	122	5
6	(M024-001/GEMN-0097)-B-B-026/MBS2655	179.9	82.9	18.3	9.8	56.6	8.0	3.7	7	282	110	3
18	KUI44:N(SG17)(GEMN-0192)-B-047/MBS2655	179.3	82.7	20.1	8.9	56.3	11.8	0.0	5	290	110	6
19	KUI44:N(SG17)(GEMN-0192)-B-050/MBS2655	179.0	82.5	20.6	8.7	57.7	3.2	3.0	7	286	129	7
24	KUI44:N(SG17)(GEMN-0192)-B-061/MBS2655	178.9	82.5	20.1	8.9	58.5	8.3	0.0	5	294	120	6
10	(M024-001/GEMN-0097)-B-B-049/MBS2655	176.6	81.4	18.0	9.8	57.0	0.2	1.4	7	297	109	16
2	(M024-001/GEMN-0097)-B-B-003/MBS2655	176.2	81.2	18.4	9.6	57.6	5.4	0.0	7	269	107	0
22	KUI44:N(SG17)(GEMN-0192)-B-054/MBS2655	173.1	79.8	19.1	9.1	56.8	19.1	4.3	6	289	116	1
25	KUI44:N(SG17)(GEMN-0192)-B-065/MBS2655	172.5	79.5	20.5	8.4	56.4	14.9	2.1	7	289	126	1
4	(M024-001/GEMN-0097)-B-B-009/MBS2655	172.1	79.3	18.8	9.2	57.9	7.0	3.0	9	279	109	0
5	(M024-001/GEMN-0097)-B-B-018/MBS2655	171.4	79.0	18.7	9.2	57.5	4.7	0.0	8	265	119	0
Number Locations		8		8	8	7	6	2	1	2	2	1
Mean		178.7		19.3	9.3	57.1	8.7	3.3	7	285	116	5
Non Check Mean		172.5		19.3	8.9	57.0	9.4	3.5	6	286	117	5
Check Means		216.9		19.4	11.2	57.5	4.3	2.3	7	280	111	3
CV		10.7		5.6		1.7						
Yield Range		149.7 - 241.1										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, and Keota in Iowa; Remington in Indiana; and Tekamah in Nebraska

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764203

Tester: MBS3520

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
46	MBS2655/MBS8731	247.2	108.9	19.1	12.9	53.7	6.7	6.7	5	307	130	5
42	Pioneer 33F85	240.1	105.8	19.3	12.4	57.7	5.3	1.0	7	297	113	2
40	MBS3520/MBS8814	233.5	102.9	19.1	12.2	53.6	6.7	4.8	6	290	120	6
44	Pioneer 31N27	231.9	102.2	20.1	11.5	58.4	2.2	13.7	5	290	117	2
41	Pioneer 31D58	230.9	101.8	19.9	11.6	57.9	9.0	0.0	7	278	103	2
45	Pioneer P1151	224.6	99.0	18.3	12.3	57.7	1.9	3.5	6	277	97	1
39	MBS2655/MBS9508	219.4	96.7	18.2	12.1	58.1	1.4	1.4	5	297	103	0
22	ATL100:N(LH82)(GEMN-0097)-064/MBS3520	213.6	94.1	18.7	11.4	56.8	6.2	1.0	4	288	123	0
43	Pioneer 34R65	210.8	92.9	17.6	12.0	59.0	0.0	0.0	8	287	90	1
48	MBS3520/MBS9451	209.4	92.3	18.8	11.1	54.9	4.3	0.5	3	303	100	0
6	ATL100:N(LH82)(GEMN-0097)-013/MBS3520	209.1	92.2	18.8	11.1	56.5	12.4	3.9	4	277	108	0
15	ATL100:N(LH82)(GEMN-0097)-043/MBS3520	208.7	92.0	19.2	10.9	55.5	13.9	13.6	7	310	133	2
9	ATL100:N(LH82)(GEMN-0097)-025/MBS3520	208.0	91.7	19.5	10.7	56.8	6.9	29.4	5	290	130	2
3	((LH82/KO679Y)/GEMN-0205)-B-B-063/MBS3520	207.3	91.4	18.2	11.4	59.2	12.3	4.0	5	265	105	2
16	ATL100:N(LH82)(GEMN-0097)-052/MBS3520	206.0	90.8	18.7	11.0	57.8	8.3	4.0	5	290	110	0
19	ATL100:N(LH82)(GEMN-0097)-056-001/MBS3520	205.5	90.6	18.8	10.9	55.6	13.4	19.6	4	293	113	9
8	ATL100:N(LH82)(GEMN-0097)-024/MBS3520	203.3	89.6	19.2	10.6	56.9	7.4	5.8	4	315	137	2
1	((LH82/KO679Y)/GEMN-0205)-B-B-022/MBS3520	202.1	89.1	20.2	10.0	54.6	4.1	0.9	6	283	110	0
20	ATL100:N(LH82)(GEMN-0097)-059/MBS3520	201.9	89.0	18.5	10.9	58.1	8.8	4.0	5	287	103	1
35	SX2788:N(LH82)(ANTIG03:N1242-B-007-B)-SIB-046/MBS3520	199.7	88.0	19.8	10.1	58.7	8.0	20.9	5	290	117	4
Number Locations		8		8	8	7	4	3	1	1	1	1
Mean		194.2		18.9	10.3	57.0	7.9	11.3	5	290	113	2
Non Check Mean		190.4		18.9	10.1	57.0	8.4	12.5	4	290	114	2
Check Means		226.9		18.8	12.1	57.2	4.5	1.4	7	290	106	2
CV		10.7		4.5		1.6						
Yield Range		136.8 - 247.2										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; St. Joseph in Missouri; Carroll in Iowa; and Farmersville in Illinois

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764204

Tester: MBS3520

		All Location Means										
		Yield	% Yield	%	Yield/			Late	Early			Green
Entry	Pedigree	B/A	/CHK	Moist	Moist	TWT	% S.L.	% R.L.	R.L. Rating	Plant Height	Ear Height	Snap (count)
53	MBS3520/MBS8814	246.6	106.7	20.6	12.0	53.0	1.2	4.7	7	301	128	2
54	Pioneer 31D58	245.4	106.2	21.3	11.5	57.2	2.7	1.9	8	302	124	0
55	Pioneer 33F85	236.3	102.3	20.0	11.8	58.0	3.7	0.0	8	286	109	3
57	Pioneer 31N27	229.9	99.5	20.8	11.1	57.6	6.3	4.4	7	294	119	0
58	Pioneer P1151	228.1	98.7	18.5	12.3	56.8	0.9	0.0	8	274	107	0
59	MBS2655/MBS9451	219.9	95.2	18.1	12.1	53.9	2.0	0.5	8	299	114	0
52	MBS2655/MBS9508	217.1	93.9	18.4	11.8	57.4	2.4	4.5	8	288	116	0
49	KUI44:N(SG17)(GEMN-0192)-B-067/MBS3520	212.5	92.0	18.5	11.5	56.3	5.5	7.2	6	299	123	3
1	(GEMN-0140/GEMN-0097)-B-B-054-B/MBS3520	210.3	91.0	19.9	10.6	54.0	7.3	7.3	6	282	124	3
56	Pioneer 34R65	210.2	91.0	18.1	11.6	58.6	1.8	0.0	9	292	105	1
21	(M024-001/GEMN-0097)-B-B-043/MBS3520	210.0	90.9	19.6	10.7	57.1	7.1	0.9	9	279	119	2
47	KUI44:N(SG17)(GEMN-0192)-B-061/MBS3520	204.7	88.6	18.6	11.0	57.9	8.6	4.7	3	299	109	2
23	(M024-001/GEMN-0097)-B-B-066/MBS3520	196.0	84.8	17.6	11.1	56.3	1.5	6.1	7	298	103	2
48	KUI44:N(SG17)(GEMN-0192)-B-065/MBS3520	196.0	84.8	19.1	10.3	57.1	13.4	6.1	4	300	114	1
50	KUI44:N(SG17)(GEMN-0192)-B-072/MBS3520	196.0	84.8	19.8	9.9	57.1	10.7	16.0	6	294	127	11
17	(M024-001/GEMN-0097)-B-B-018/MBS3520	193.6	83.8	17.8	10.9	57.2	2.6	0.9	5	270	115	0
18	(M024-001/GEMN-0097)-B-B-026/MBS3520	193.5	83.7	17.8	10.9	56.1	7.3	2.6	6	290	111	0
43	KUI44:N(SG17)(GEMN-0192)-B-052/MBS3520	193.1	83.6	18.2	10.6	57.6	6.8	3.7	8	287	115	4
3	(LH61/(26e/GEMN-0124))-SIB-SIB-SIB-024/MBS3520	191.6	82.9	20.3	9.4	56.7	2.8	1.0	7	304	121	1
25	BR105:N(GEMN-0174)49y-B-018/MBS3520	191.0	82.6	19.5	9.8	57.3	4.2	21.7	8	299	132	8
Number Locations		8		8	8	7	5	3	1	2	2	1
Mean		188.9		18.8	10.0	57.2	8.0	4.7	6	287	115	2
Non Check Mean		184.9		18.8	9.8	57.2	8.5	4.9	6	286	115	2
Check Means		231.1		19.7	11.7	56.8	2.3	2.2	8	294	116	1
CV		10.4		4.6		1.5						
Yield Range		152.5 - 246.6										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, Keota, and Carroll in Iowa; and Farmersville in Illinois

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764205

Tester: MBS5411

		All Location Means										
		Yield	% Yield	%	Yield/			Late	Early			Green
Entry	Pedigree	B/A	/CHK	Moist	Moist	TWT	% S.L.	% R.L.	R.L. Rating	Plant Height	Ear Height	Snap (count)
44	Pioneer 31D58	232.6	113.3	19.0	12.2	58.9	12.3	0.0	8	292	108	3
47	Pioneer 31N27	214.7	104.6	19.3	11.1	59.5	10.4	16.3	5	280	107	0
48	Pioneer P1151	208.7	101.7	18.0	11.6	57.6	4.1	0.0	6	270	87	1
45	Pioneer 33F85	204.0	99.4	18.8	10.9	58.6	3.5	5.5	6	283	113	1
43	MBS3520/MBS8814	201.2	98.0	18.4	10.9	55.7	10.3	0.0	7	290	117	11
46	Pioneer 34R65	196.2	95.6	17.4	11.3	59.2	14.6	5.7	7	273	90	0
42	MBS2655/MBS9508	192.8	93.9	17.2	11.2	59.1	12.5	3.4	6	280	108	1
17	CML373:S(DJ7)(GEMS-0188)-B-030/MBS5411	186.3	90.7	16.2	11.5	57.7	15.1	2.5	7	300	115	8
20	CML373:S(DJ7)(GEMS-0188)-B-043/MBS5411	181.7	88.5	16.2	11.2	56.2	21.2	1.5	6	290	120	6
5	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-047/MBS5411	177.6	86.5	16.2	11.0	57.5	18.2	0.0	5	283	107	1
35	NS1:S(GEMS-0149)41-031-001/MBS5411	176.7	86.1	16.4	10.8	56.2	27.4	2.3	5	280	117	1
15	CML373:S(DJ7)(GEMS-0188)-B-025/MBS5411	176.2	85.8	16.2	10.9	57.3	20.0	10.1	5	292	113	3
1	((KO679Y/GEMS-0115)/GEMS-0181)-B-023/MBS5411	175.2	85.3	16.5	10.6	57.3	12.9	0.0	7	297	132	8
32	Ki21:S(DJ7)(GEMS-0115)-057-001/MBS5411	175.1	85.3	17.5	10.0	57.1	16.3	3.0	4	293	123	0
34	NS1:S(GEMS-0149)41-030-001/MBS5411	173.5	84.5	16.9	10.3	57.2	31.7	12.2	4	293	132	0
24	Ki21:S(DJ7)(GEMS-0115)-012-001/MBS5411	172.2	83.9	17.3	10.0	58.2	20.9	6.4	3	278	103	1
30	Ki21:S(DJ7)(GEMS-0115)-033-001/MBS5411	171.9	83.7	17.3	9.9	57.3	15.8	2.9	3	285	130	2
10	CML373:S(DJ7)(GEMS-0188)-B-005/MBS5411	171.8	83.7	16.0	10.7	57.4	18.4	0.0	4	288	123	0
27	Ki21:S(DJ7)(GEMS-0115)-026-001/MBS5411	171.8	83.7	16.8	10.2	56.5	22.4	4.9	6	312	142	1
29	Ki21:S(DJ7)(GEMS-0115)-032-001/MBS5411	171.8	83.7	17.1	10.0	57.8	12.8	0.0	4	285	113	0
Number Locations		8		8	8	6	6	2	1	1	1	1
Mean		169.0		17.2	9.8	57.8	21.8	3.5	6	290	118	2
Non Check Mean		164.7		17.1	9.6	57.8	23.1	3.6	5	290	119	2
Check Means		205.3		18.1	11.3	58.3	10.6	2.9	7	284	107	3
CV		13.9		5.0		2.1						
Yield Range		133.2 - 232.6										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Atlantic, and Mount Pleasant in Iowa; Elberfeld in Indiana; and Tekamah in Nebraska

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764206

Tester: MBS6403

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
58	MBS2655/MBS8731	252.3	112.9	18.5	13.6	55.6	1.9	3.0	6	293	110	1
52	MBS3520/MBS8814	235.9	105.5	18.6	12.7	55.8	3.9	2.3	8	298	128	8
53	Pioneer 31D58	235.8	105.5	19.0	12.4	59.2	5.1	0.4	9	297	117	0
54	Pioneer 33F85	231.5	103.6	18.2	12.7	58.8	4.4	0.0	7	268	107	1
56	Pioneer 31N27	220.1	98.5	18.9	11.6	59.5	7.7	3.3	8	290	100	1
57	Pioneer P1151	219.8	98.3	17.5	12.6	58.6	2.0	0.0	8	275	103	0
51	MBS2655/MBS9508	218.8	97.9	17.0	12.9	59.1	3.0	11.8	5	283	103	0
38	Ki21:S(DJ7)(GEMS-0115)-003-001/MBS6403	215.4	96.4	17.3	12.5	56.2	3.1	2.8	7	300	117	1
60	MBS3520/MBS9451	202.9	90.8	17.9	11.3	56.2	1.7	0.0	4	308	103	0
32	CML373:S(DJ7)(GEMS-0188)-B-048/MBS6403	202.2	90.5	16.5	12.3	57.9	4.4	5.2	7	297	113	1
13	(GEMS-0219/GEMS-0227)-B-015/MBS6403	201.5	90.2	16.3	12.4	58.3	4.0	0.0	7	290	97	0
59	MBS2655/MBS9451	201.1	90.0	17.2	11.7	56.3	3.4	1.0	7	300	112	0
8	(GEMS-0115/GEMS-0222)-B-B-054/MBS6403	198.9	89.0	16.7	11.9	56.5	16.8	6.4	5	288	107	0
24	CML373:S(DJ7)(GEMS-0188)-B-012/MBS6403	198.7	88.9	16.5	12.0	58.9	6.7	0.9	6	297	123	0
30	CML373:S(DJ7)(GEMS-0188)-B-040/MBS6403	197.2	88.2	18.4	10.7	57.8	7.8	6.6	7	305	115	1
33	CML373:S(DJ7)(GEMS-0188)-B-052/MBS6403	196.9	88.1	17.9	11.0	58.8	18.0	4.7	3	305	120	0
44	Ki21:S(DJ7)(GEMS-0115)-032-001/MBS6403	195.9	87.7	17.9	10.9	58.6	4.6	18.5	4	270	97	0
15	(GEMS-0219/GEMS-0227)-B-035/MBS6403	195.8	87.6	16.4	11.9	59.8	10.7	0.0	9	307	110	0
55	Pioneer 34R65	195.5	87.5	17.2	11.4	60.1	5.1	1.5	7	282	113	0
12	(GEMS-0219/GEMS-0227)-B-013/MBS6403	195.4	87.4	16.4	11.9	59.3	4.6	0.0	6	290	103	0
Number Locations		8		8	8	6	6	4	1	1	1	1
Mean		191.1		16.9	11.3	58.2	7.4	3.4	6	288	109	1
Non Check Mean		188.1		16.8	11.2	58.2	7.7	3.4	6	289	108	0
Check Means		223.5		18.0	12.4	58.6	4.3	3.2	7	286	114	2
CV		10.6		5.2		1.5						
Yield Range		147.3 - 252.3										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; St. Joseph in Missouri; Farmersville in Illinois; and Tekamah in Nebraska

Entry New GEM Code

13 GEMS-0298

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764207

Tester: MBS6858 & MBS8731

		All Location Means										
		Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
Entry	Pedigree											
44	MBS3520/MBS8814	251.9	117.2	17.2	14.6	53.4	2.7	2.3	8	318	138	10
45	Pioneer 31D58	242.8	113.0	19.6	12.4	57.0	5.3	1.1	9	287	117	0
36	(GEMS-0219/GEMS-0227)-B-033/MBS8731	241.0	112.1	19.9	12.1	55.3	9.3	2.3	8	307	123	0
34	(GEMS-0219/GEMS-0227)-B-015/MBS8731	240.9	112.1	17.7	13.6	56.1	14.1	1.1	8	297	120	0
22	(GEMS-0113/GEMS-0162)-B-B-054/MBS8731	238.3	110.9	17.9	13.3	56.5	3.8	10.9	9	307	113	0
48	Pioneer 31N27	231.0	107.5	19.1	12.1	58.2	6.7	5.4	7	300	115	1
13	(GEMS-0003/GEMS-0032)-B-B-015/MBS8731	230.6	107.3	17.7	13.0	55.7	3.2	9.6	9	292	133	2
21	(GEMS-0113/GEMS-0162)-B-B-043/MBS8731	230.5	107.3	18.2	12.7	55.6	0.9	1.9	9	290	105	1
40	(GEMS-0219/GEMS-0227)-B-050/MBS8731	227.7	106.0	17.1	13.3	57.1	3.4	1.1	7	302	98	1
6	(GEMS-0115/GEMS-0222)-B-B-030/MBS6858	224.8	104.6	18.1	12.4	55.7	3.0	0.0	7	300	107	0
4	(GEMS-0115/GEMS-0222)-B-B-015/MBS6858	222.4	103.5	17.6	12.6	54.3	9.5	11.4	5	298	120	0
3	(GEMS-0115/GEMS-0222)-B-B-011/MBS6858	221.8	103.2	17.5	12.7	54.2	20.2	23.1	5	307	123	2
41	(GEMS-0219/GEMS-0227)-B-053/MBS8731	221.3	103.0	19.1	11.6	56.4	2.0	5.6	9	298	110	0
46	Pioneer 33F85	220.7	102.7	18.9	11.7	56.4	3.6	0.8	9	283	112	1
30	(GEMS-0115/GEMS-0222)-B-B-033/MBS8731	220.2	102.5	17.1	12.9	57.0	4.3	0.8	9	300	122	2
37	(GEMS-0219/GEMS-0227)-B-035/MBS8731	220.2	102.5	17.7	12.4	56.0	4.7	10.5	8	312	127	2
42	(GEMS-0219/GEMS-0227)-B-056/MBS8731	220.0	102.4	17.7	12.4	55.5	3.7	4.4	9	288	107	0
2	(GEMS-0115/GEMS-0222)-B-B-009/MBS6858	219.8	102.3	16.7	13.2	54.0	3.6	17.6	6	312	120	0
26	(GEMS-0115/GEMS-0222)-B-B-015/MBS8731	219.4	102.1	17.3	12.7	54.3	14.2	0.8	8	303	118	6
35	(GEMS-0219/GEMS-0227)-B-024/MBS8731	219.1	102.0	19.2	11.4	55.6	3.4	1.9	7	287	138	0
Number Locations		6		6	6	2	3	4	1	1	1	1
Mean		214.6		17.8	12.1	55.5	6.3	6.8	7	298	117	3
Non Check Mean		214.6		17.7	12.1	55.4	6.6	7.3	7	299	117	3
Check Means		214.9		18.4	11.7	56.3	3.3	2.3	9	294	114	2
CV		8.9		5.8		1.6						
Yield Range		187.1 - 251.9										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and Vigo in Indiana

Entry New GEM Code

34 GEMS-0298
22 GEMS-0296
30 GEMS-0297

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764208

Tester: MBS8731 & MBS8814

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
38	NS1:S(GEMS-0149)41-057-001/MBS8731	227.3	108.0	20.0	11.4	55.2	10.6	0.0	9	320	128	2
45	Pioneer 31D58	227.2	107.9	21.4	10.6	57.8	0.0	0.0	9	303	115	1
44	MBS3520/MBS8814	219.5	104.3	19.7	11.1	55.9	6.5	1.6	8	318	123	6
15	CML341:S(GEMS-0016)(LH220HT)-B-121/MBS8731	218.2	103.7	20.0	10.9	57.5	3.0	3.2	8	292	123	0
48	Pioneer 31N27	214.7	102.0	20.7	10.4	58.0	2.8	30.1	8	292	113	0
46	Pioneer 33F85	214.1	101.7	19.6	10.9	58.8	4.9	0.0	8	273	110	2
37	NS1:S(GEMS-0149)41-051-001/MBS8731	213.7	101.5	20.5	10.4	57.4	3.6	1.1	8	282	110	32
41	MBS3520/MBS8814	213.3	101.3	20.0	10.7	56.0	13.2	10.4	8	297	120	12
2	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS8731	211.9	100.7	19.4	10.9	55.7	8.9	6.3	8	295	117	4
11	CML341:S(GEMS-0016)(LH220HT)-B-064/MBS8731	211.1	100.3	21.1	10.0	56.7	5.9	1.7	9	307	123	2
31	CML373:S(GEMS-0115)(PHJ40)-B-106/MBS8731	209.6	99.6	20.0	10.5	55.8	0.7	1.0	7	302	122	0
5	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-018/MBS8731	207.8	98.7	18.1	11.5	55.0	6.9	29.0	5	320	137	2
1	Ki21:S(DJ7)(GEMS-0115)-B-013-B/MBS6858	206.6	98.1	19.7	10.5	56.7	0.0	40.5	7	313	130	4
42	PHB47/MBS8814	203.7	96.8	19.8	10.3	55.0	3.7	0.0	7	300	123	0
33	Ki21:S(DJ7)(GEMS-0115)-B-013-B/MBS8731	203.5	96.7	19.9	10.2	55.7	10.0	1.1	9	290	130	3
40	NS1:S(GEMS-0149)41-066-001/MBS8731	202.3	96.1	19.7	10.3	56.8	9.5	0.0	8	303	107	22
6	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-054/MBS8731	202.1	96.0	20.0	10.1	56.7	8.9	0.0	7	313	117	3
9	CML341:S(GEMS-0016)(LH220HT)-B-054/MBS8731	201.8	95.9	18.8	10.7	57.3	8.5	5.3	7	285	127	4
8	CML341:S(GEMS-0016)(LH220HT)-B-036/MBS8731	200.0	95.0	20.7	9.7	56.7	3.1	2.6	5	315	113	10
14	CML341:S(GEMS-0016)(LH220HT)-B-109/MBS8731	199.7	94.9	19.4	10.3	58.3	3.2	2.7	8	290	117	10
Number Locations		6		6	6	3	2	3	1	1	1	1
Mean		196.7		19.6	10.0	56.9	4.6	5.4	8	298	120	6
Non Check Mean		194.7		19.6	9.9	56.8	4.7	5.8	8	298	121	7
Check Means		210.5		19.6	10.7	57.6	4.3	2.9	8	298	114	5
CV		9.2		4.6		2.2						
Yield Range		169.3 - 227.3										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Atlantic, and Mount Pleasant in Iowa; and Oaktown in Indiana

Entry New GEM Code

37 GEMS-0300
2 GEMS-0299
40 GEMS-0301

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764209

Tester: MBS9451

		All Location Means										
		Yield	% Yield	%	Yield/			Late %	Early			Green
Entry	Pedigree	B/A	/CHK	Moist	Moist	TWT	% S.L.	R.L.	R.L.	Plant	Ear	Snap
									Rating	Height	Height	(count)
45	Pioneer 31D58	243.0	109.6	19.0	12.8	59.9	7.6	0.0	8	292	103	0
48	Pioneer 31N27	231.3	104.3	19.1	12.1	60.3	0.9	5.0	6	283	108	0
44	MBS3520/MBS8814	231.1	104.2	18.1	12.8	55.4	1.5	0.0	7	297	123	6
46	Pioneer 33F85	224.1	101.1	19.1	11.7	58.9	2.9	0.7	9	287	107	1
18	(GEMS-0219/GEMS-0227)-B-015/MBS9451	208.0	93.8	17.6	11.8	57.0	1.2	0.4	6	297	102	1
9	(GEMS-0113/GEMS-0162)-B-B-036/MBS9451	207.6	93.6	17.7	11.7	57.6	8.8	0.0	6	317	120	2
10	(GEMS-0113/GEMS-0162)-B-B-036/MBS9451	207.6	93.6	17.8	11.7	56.7	6.4	0.4	7	312	118	1
27	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS9451	207.3	93.5	17.2	12.1	54.9	0.9	2.9	6	293	110	0
47	Pioneer 34R65	206.9	93.3	17.0	12.2	60.1	3.9	0.7	8	262	95	0
20	(GEMS-0219/GEMS-0227)-B-033/MBS9451	205.6	92.7	17.7	11.6	57.3	7.1	1.1	8	275	95	0
22	(GEMS-0219/GEMS-0227)-B-042/MBS9451	204.6	92.3	16.4	12.5	56.5	4.2	0.4	8	293	98	0
43	MBS2655/MBS9508	203.7	91.9	17.1	11.9	59.5	2.7	0.4	6	295	95	0
16	(GEMS-0113/GEMS-0162)-B-B-060/MBS9451	203.4	91.7	17.7	11.5	57.8	3.3	1.1	6	327	125	2
1	(GEMS-0003/GEMS-0032)-B-B-006/MBS9451	202.7	91.4	18.2	11.1	58.1	2.8	0.0	9	290	125	0
26	(GEMS-0219/GEMS-0227)-B-056/MBS9451	201.7	91.0	17.1	11.8	57.9	1.2	0.0	9	300	108	1
8	(GEMS-0113/GEMS-0162)-B-B-027/MBS9451	201.0	90.7	17.7	11.4	58.6	5.9	0.0	8	290	117	0
7	(GEMS-0113/GEMS-0162)-B-B-025/MBS9451	200.0	90.2	17.7	11.3	57.2	9.8	5.5	6	315	113	1
15	(GEMS-0113/GEMS-0162)-B-B-054/MBS9451	199.6	90.0	17.7	11.3	59.2	3.1	1.7	7	323	128	1
14	(GEMS-0113/GEMS-0162)-B-B-043/MBS9451	198.5	89.5	17.2	11.5	57.2	6.5	0.0	8	307	112	2
2	(GEMS-0003/GEMS-0032)-B-B-015/MBS9451	196.9	88.8	17.9	11.0	58.1	6.7	2.8	6	293	128	4
Number Locations		6		6	6	3	5	4	1	1	1	1
Mean		189.4		17.8	10.6	57.7	5.7	1.4	7	290	111	1
Non Check Mean		185.7		17.7	10.5	57.6	6.0	1.5	7	290	111	1
Check Means		221.7		18.1	12.2	58.8	3.7	0.3	8	287	105	1
CV		11.2		4.8		1.2						
Yield Range		129.8 - 243.0										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; and St. Joseph in Missouri

Entry New GEM Code

18 GEMS-0298
27 GEMS-0299
15 GEMS-0296

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764210

Tester: MBS9451

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
32	Pioneer 31D58	214.2	106.4	20.9	10.2	59.1	24.3	0.0	8	293	112	2
35	Pioneer 31N27	210.7	104.7	20.6	10.2	59.3	0.8	7.1	6	278	107	2
33	Pioneer 33F85	207.1	102.9	19.9	10.4	57.7	4.4	0.0	7	287	108	0
27	NS1:S(GEMS-0149)41-057-001/MBS9451	205.6	102.1	21.1	9.7	55.9	0.0	0.0	8	300	112	0
26	NS1:S(GEMS-0149)41-051-001/MBS9451	204.7	101.7	19.8	10.3	58.3	2.2	1.4	7	282	117	0
31	MBS3520/MBS8814	203.3	101.0	20.2	10.1	56.7	8.8	0.0	7	300	123	3
25	NS1:S(GEMS-0149)41-049-001/MBS9451	201.6	100.1	18.6	10.8	57.6	0.8	1.4	9	287	105	1
30	MBS2655/MBS9508	197.9	98.3	18.7	10.6	58.2	2.9	0.0	7	278	97	1
29	NS1:S(GEMS-0149)41-066-001/MBS9451	194.3	96.5	19.5	10.0	56.7	3.0	0.0	5	293	120	1
36	MBS3520/MBS9451	192.7	95.7	19.4	9.9	56.2	1.5	0.0	8	305	102	0
22	NS1:S(GEMS-0149)41-032-001/MBS9451	192.6	95.7	19.2	10.0	55.4	5.2	0.0	8	305	117	2
20	NS1:S(GEMS-0149)41-030-001/MBS9451	190.6	94.7	19.8	9.6	55.4	0.7	5.7	7	280	112	5
21	NS1:S(GEMS-0149)41-031-001/MBS9451	190.6	94.7	19.4	9.8	56.3	2.8	0.0	5	297	122	5
9	Ki 14:S21z(PHJ40)-B-007/MBS9451	188.0	93.4	19.5	9.6	56.5	6.7	0.0	7	293	117	1
24	NS1:S(GEMS-0149)41-045-001/MBS9451	187.6	93.2	19.6	9.6	57.0	5.8	4.3	7	302	118	0
19	NS1:S(GEMS-0149)41-006-001/MBS9451	185.6	92.2	22.0	8.4	54.2	0.0	0.0	7	278	115	0
23	NS1:S(GEMS-0149)41-039-001/MBS9451	184.9	91.9	20.7	8.9	57.0	3.2	0.0	6	297	113	10
28	NS1:S(GEMS-0149)41-064-001/MBS9451	184.1	91.5	17.5	10.5	56.7	2.2	0.0	8	285	112	1
34	Pioneer 34R65	183.9	91.4	19.1	9.6	59.3	7.7	0.0	8	260	98	0
18	Ki21:S(DJ7)(GEMS-0115)-B-013-B/MBS9451	180.7	89.8	19.2	9.4	56.2	4.6	4.2	7	283	103	0
Number Locations		7		7	7	4	2	1	1	1	1	1
Mean		181.2		19.3	9.4	57.2	3.6	1.2	7	286	111	1
Non Check Mean		177.6		19.2	9.3	57.1	2.6	1.4	7	286	111	1
Check Means		201.3		19.8	10.2	58.2	9.6	0.0	7	284	108	1
CV		10.7		6.2		2.6						
Yield Range		146.8 - 214.2										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Atlantic, and Mount Pleasant in Iowa; Greensburg in Indiana; and St. Joseph in Missouri

Entry New GEM Code

26 GEMS-0300

29 GEMS-0301

2017 GEM Ames Yield Trial Top Twenty Entries

Experiment: GEM1764211

Tester: MBS9508

		All Location Means										
Entry	Pedigree	Yield B/A	% Yield /CHK	% Moist	Yield/ Moist	TWT	% S.L.	Late % R.L.	Early R.L. Rating	Plant Height	Ear Height	Green Snap (count)
32	MBS3520/MBS8814	234.0	109.6	18.6	12.6	55.0	6.7	6.5	8	297	122	16
33	Pioneer 31D58	227.2	106.4	20.3	11.2	58.1	2.6	0.0	8	265	98	5
36	Pioneer 31N27	225.1	105.4	19.9	11.3	58.3	6.4	8.8	6	283	117	0
34	Pioneer 33F85	216.8	101.5	19.1	11.4	57.9	5.2	0.0	6	283	107	1
19	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-037/MBS9508	199.9	93.6	18.2	11.0	59.4	8.1	6.5	6	277	123	0
35	Pioneer 34R65	198.2	92.8	17.4	11.4	59.6	9.7	3.8	9	253	102	0
12	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-005/MBS9508	197.5	92.5	17.0	11.6	58.4	5.5	19.1	6	287	125	0
31	MBS2655/MBS9508	191.6	89.7	17.5	10.9	59.0	1.4	0.9	8	270	100	3
9	(GEMS-0113/GEMS-0162)-B-B-002/MBS9508	191.0	89.4	18.1	10.6	59.0	11.4	9.8	8	288	115	0
7	(GEMS-0003/GEMS-0032)-B-B-092/MBS9508	190.9	89.4	17.9	10.7	58.3	21.3	12.6	7	260	117	0
21	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-045/MBS9508	190.9	89.4	17.2	11.1	58.3	12.4	13.1	4	285	108	0
20	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-038/MBS9508	190.0	89.0	17.9	10.6	58.4	27.1	15.6	4	275	110	0
8	(GEMS-0003/GEMS-0032)-B-B-102/MBS9508	189.1	88.5	19.0	10.0	58.9	14.4	11.2	9	295	130	0
23	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-054/MBS9508	186.8	87.5	18.3	10.2	59.6	17.9	10.8	6	300	115	3
18	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-036/MBS9508	185.4	86.8	18.5	10.0	58.3	9.0	12.9	7	308	122	0
25	CML341:S(DJ7)(PHJ40)-B-017/MBS9508	185.0	86.6	16.2	11.4	59.4	13.5	11.2	4	293	120	0
6	(GEMS-0003/GEMS-0032)-B-B-085/MBS9508	184.2	86.2	17.6	10.5	57.8	13.2	17.5	5	293	118	0
13	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-015/MBS9508	184.2	86.2	16.9	10.9	58.3	8.0	21.1	6	298	100	2
11	(GEMS-0113/GEMS-0162)-B-B-027/MBS9508	183.4	85.9	17.6	10.4	60.0	5.4	5.6	7	295	112	0
17	(H8431/((GEMS-0115/Mp717)/TZAR101))-SIB-B-033/MBS9508	183.4	85.9	17.6	10.4	57.9	10.5	8.0	6	290	115	0
Number Locations		7		7	7	4	5	3	1	1	1	1
Mean		187.8		17.8	10.6	58.7	10.7	8.9	6	284	114	1
Non Check Mean		183.3		17.6	10.4	58.9	11.7	10.0	6	285	115	0
Check Means		213.6		18.6	11.5	57.9	5.1	2.2	8	274	106	5
CV		11.4		5.2		1.4						
Yield Range		155.8 - 234.0										

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Atlantic in Iowa; Farmersville in Illinois; and Tekamah in Nebraska

Entry New GEM Code

12 GEMS-0299

2017 GEM Ames Advanced Trials: 1764301

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
48	Pioneer 31N27	105.6%	215.6	10.8	20.1	8.6	0.0	7	57.9	1	269	94	97.3
46	Pioneer 33F85	102.6%	209.6	11.1	19.1	7.5	0.0	9	57.7	3	263	107	97.8
31	GEMN-0178/MBS3520	101.9%	208.1	10.7	19.4	4.0	4.8	3	55.9	0	281	116	96.0
18	GEMN-0252/MBS2614	100.3%	204.8	9.9	20.9	1.2	4.3	6	54.6	4	252	108	93.3
45	MBS3520/MBS8814	99.2%	202.6	10.7	19.1	2.1	4.2	7	53.8	18	275	119	96.3
30	GEMN-0144/MBS3520	96.9%	197.8	10.0	20.0	7.0	14.4	5	54.9	8	290	124	95.7
40	GEMN-0247/MBS3520	95.1%	194.1	9.8	20.0	3.9	1.5	3	53.7	1	276	114	94.6
21	GEMN-0285/MBS2614	94.8%	193.5	9.8	20.0	1.0	0.0	4	56.4	0	253	114	90.6
13	GEMN-0097/MBS2614	94.3%	192.6	11.0	17.7	5.4	0.0	7	55.0	6	262	117	96.8
47	Pioneer 34R65	92.6%	189.1	10.7	17.7	0.4	0.0	9	57.7	3	259	94	95.9
23	GEMN-0157/MBS2655	91.8%	187.4	10.6	17.9	5.3	0.0	8	57.3	7	277	114	95.6
44	MBS2655/MBS9508	91.6%	187.0	10.8	17.4	5.7	15.2	4	58.4	1	263	96	94.9
35	GEMN-0097/MBS3520	91.5%	186.8	10.8	17.3	6.1	15.1	5	55.1	2	290	108	95.1
22	GEMN-0286/MBS2614	90.8%	185.4	10.1	18.4	1.0	3.9	7	55.8	11	273	119	94.0
33	GEMN-0286/MBS3520	90.7%	185.3	10.1	18.4	0.4	0.0	7	55.4	5	282	119	93.1
14	GEMN-0236/MBS2614	90.6%	185.0	8.8	21.3	4.3	0.0	7	55.1	2	259	104	94.8
34	GEMN-0285/MBS3520	90.3%	184.4	10.3	18.2	0.0	0.0	2	56.3	0	284	118	93.8
39	GEMN-0246/MBS3520	90.2%	184.1	10.5	17.9	5.0	5.8	5	54.4	0	261	105	88.4
38	GEMN-0261/MBS3520	89.8%	183.4	10.8	17.1	2.2	0.0	5	54.8	3	289	115	88.2
1	GEMN-0097/MBS2535	89.6%	183.0	10.5	17.5	7.8	3.2	4	56.2	6	260	102	96.3
17	GEMN-0249/MBS2614	89.6%	183.0	9.0	20.3	12.5	2.1	5	56.7	0	260	120	95.0
15	GEMN-0246/MBS2614	89.2%	182.1	9.8	18.7	11.6	7.9	7	55.0	0	250	108	94.1
28	GEMN-0225/MBS2655	88.5%	180.7	9.4	19.3	5.4	11.4	4	56.2	2	285	124	87.2
6	GEMN-0252/MBS2535	88.4%	180.6	9.4	19.2	2.8	3.7	7	56.6	0	259	106	94.2
25	GEMN-0097/MBS2655	87.9%	179.4	10.1	17.8	2.1	10.4	3	55.9	2	278	112	90.0
8	GEMN-0261/MBS2535	87.6%	178.8	10.5	17.3	5.8	0.0	6	55.6	0	259	103	93.7
43	GEMN-0252/MBS3520	87.4%	178.4	8.6	20.9	0.0	10.0	5	54.3	3	279	99	88.3
7	GEMN-0260/MBS2535	87.1%	177.9	10.3	17.5	0.0	1.7	6	54.8	2	249	104	89.5
20	GEMN-0261/MBS2614	86.6%	176.9	10.4	17.3	7.4	6.3	7	54.9	5	260	107	92.1
5	GEMN-0249/MBS2535	86.3%	176.3	9.6	18.5	7.6	3.6	7	57.6	0	275	100	93.4
41	GEMN-0249/MBS3520	85.7%	175.1	9.2	19.1	3.6	0.0	7	56.8	4	286	116	90.6
9	GEMN-0285/MBS2535	85.5%	174.5	9.4	18.8	2.8	3.5	5	55.8	3	255	109	95.2
19	GEMN-0260/MBS2614	84.6%	172.7	10.0	17.4	4.1	0.8	7	54.3	7	229	98	91.8
42	GEMN-0225/MBS3520	84.4%	172.3	9.0	19.5	1.1	16.9	6	55.9	0	274	115	92.6
4	GEMN-0247/MBS2535	83.6%	170.8	9.2	18.8	2.5	2.2	6	55.0	0	243	106	91.6

2017 GEM Ames Advanced Trials: 1764301

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
32	GEMN-0238/MBS3520	83.1%	169.7	9.5	17.8	6.4	13.3	6	57.9	0	254	100	91.8
37	GEMN-0260/MBS3520	83.1%	169.6	9.6	17.8	3.5	8.5	6	55.5	1	267	110	91.8
2	GEMN-0236/MBS2535	81.1%	165.6	8.5	19.6	0.4	0.8	8	56.0	1	247	101	90.1
3	GEMN-0246/MBS2535	79.9%	163.2	9.7	16.7	5.2	0.0	7	55.6	0	230	92	93.0
29	GEMN-0252/MBS2655	79.2%	161.8	8.4	19.3	8.1	0.8	8	55.3	9	274	119	91.9
16	GEMN-0247/MBS2614	79.0%	161.4	8.3	19.5	1.5	10.6	7	53.8	2	246	122	87.8
26	GEMN-0236/MBS2655	78.9%	161.2	7.8	20.9	8.3	0.7	7	56.3	1	279	124	95.5
10	GEMN-0286/MBS2535	78.6%	160.6	8.7	18.7	0.4	0.7	7	55.8	9	267	109	95.4
24	GEMN-0238/MBS2655	76.4%	156.0	8.1	19.4	25.2	0.0	6	56.6	21	271	123	85.4
11	GEMS-0226/MBS2535	76.2%	155.6	7.6	20.6	5.0	0.0	5	56.6	3	253	105	90.5
27	GEMN-0260/MBS2655	74.5%	152.1	8.8	17.5	3.3	2.2	7	53.9	7	238	94	84.8
36	GEMN-0236/MBS3520	72.9%	148.8	7.3	20.8	1.4	0.0	7	55.1	5	274	115	82.1
12	GEMS-0227/MBS2535	70.4%	143.7	7.8	18.3	2.0	0.0	8	59.3	7	242	75	93.1

Number Locations	7	7	7	4	2	1	5	1	2	2	7
Mean	178.6	9.6	18.8	4.6	4.0	6	55.8	3.7	264	109	92.5
Non Check Mean	176.2	9.5	18.8	4.5	4.0	6	55.7	3.5	264	109	92.1
Check Mean	204.2	10.8	19.0	4.8	3.9	7	56.8	5.2	266	102	96.4
CV (Error)	9.9	10.8	5.5	134.6	149.4	2.4	3.3	7.1	7.5		

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Mount Pleasant in Iowa; Lewiston in North Carolina; and Farmersville in Illinois

2017 GEM Ames Advanced Trials: 1764302

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
36	Pioneer 31N27	103.5%	222.3	10.1	22.3	0.0	5.4	6	58.8	1	292	117	93.6
33	MBS3520/MBS8814	103.4%	222.1	10.3	21.8	1.7	5.4	8	57.3	12	302	120	71.4
34	Pioneer 33F85	102.5%	220.2	10.5	21.2	0.0	3.4	7	58.9	6	285	117	93.1
32	MBS2655/MBS9508	99.3%	213.2	11.2	19.3	4.7	16.1	7	58.4	0	278	115	88.1
35	Pioneer 34R65	94.7%	203.5	10.5	19.5	1.4	2.7	7	57.0	0	260	100	96.4
27	PHT11/MBS5411	92.6%	198.9	11.3	17.6	8.1	16.7	5	59.2	0	297	123	90.3
23	GEMS-0284/MBS5411	90.9%	195.3	10.5	18.7	28.1	4.0	6	58.0	0	305	125	85.6
26	PHR61/MBS5411	90.2%	193.7	10.8	18.1	4.3	1.4	7	58.3	0	287	107	95.9
3	GEMS-0147/MBS5411	89.3%	191.8	10.2	18.9	0.0	4.7	5	58.1	1	307	130	89.2
6	GEMS-0227/MBS5411	89.2%	191.7	11.4	16.9	0.0	0.0	8	57.6	0	302	107	85.9
24	PHB47/MBS5411	89.0%	191.1	11.0	17.4	2.9	2.0	5	57.8	0	293	108	94.2
2	MBS5411/GEMS-0240	88.6%	190.3	10.3	18.6	0.0	9.4	4	56.4	5	297	125	91.4
11	GEMS-0262/MBS5411	87.2%	187.3	9.4	20.0	0.0	8.9	6	58.5	4	288	128	92.0
16	GEMS-0269/MBS5411	87.2%	187.2	9.9	19.1	16.2	3.4	5	56.0	0	273	123	89.7
31	PASCO14:S212612-B-032-001/MBS5411	87.0%	186.8	8.6	22.0	4.3	0.7	7	57.9	1	302	125	89.7
18	GEMS-0276/MBS5411	86.6%	186.1	10.6	17.7	2.9	8.1	6	57.1	4	300	127	90.9
28	PHT47/MBS5411	85.9%	184.6	10.5	17.7	12.9	0.0	8	59.5	0	302	117	97.0
8	GEMS-0234/MBS5411	85.5%	183.6	10.1	18.3	2.9	4.8	4	58.2	0	285	117	81.4
7	GEMS-0228/MBS5411	84.3%	181.1	10.2	17.9	0.0	4.4	7	57.7	0	297	128	86.4
10	GEMS-0248/MBS5411	83.6%	179.6	9.3	19.4	7.6	7.2	7	59.3	0	290	122	72.5
5	GEMS-0226/MBS5411	83.1%	178.6	9.7	18.6	0.0	6.7	6	57.7	3	315	143	86.4
1	MBS5411/GEMS-0237	82.0%	176.2	10.2	17.3	1.4	3.5	6	57.1	1	293	108	81.4
17	GEMS-0275/MBS5411	81.2%	174.5	9.1	19.4	3.1	27.6	5	58.6	1	297	113	91.4
29	PHT55/MBS5411	81.1%	174.3	9.5	18.4	8.1	4.7	7	59.3	0	302	122	84.2
25	PHR47/MBS5411	80.8%	173.5	10.2	17.1	0.0	8.0	6	58.0	1	292	108	91.4
21	GEMS-0281/MBS5411	80.7%	173.4	9.6	18.2	6.9	5.4	6	57.9	0	288	113	87.8
22	GEMS-0283/MBS5411	80.0%	171.9	9.9	17.5	2.8	5.5	6	58.6	5	275	115	88.6
30	PHW51/MBS5411	79.6%	171.0	9.2	18.9	0.0	3.2	7	58.8	1	300	120	87.8
20	GEMS-0279/MBS5411	79.6%	170.9	8.3	20.6	3.8	3.9	7	57.5	0	292	123	84.7
13	GEMS-0264/MBS5411	79.1%	169.8	8.2	21.1	6.9	0.0	5	56.9	0	285	130	77.8
15	GEMS-0268/MBS5411	78.3%	168.2	8.7	19.7	1.5	20.8	4	57.3	0	280	128	86.4
4	GEMS-0148/MBS5411	77.9%	167.3	8.7	19.4	1.6	6.7	4	57.2	3	282	110	93.1
12	GEMS-0263/MBS5411	76.8%	164.9	8.2	20.1	0.0	12.1	6	57.8	0	288	135	84.2
9	GEMS-0235/MBS5411	76.6%	164.6	9.1	18.1	0.0	2.0	7	57.3	0	277	117	80.9
14	GEMS-0265/MBS5411	76.1%	163.5	8.5	19.2	6.7	3.4	6	57.9	0	288	128	89.5

2017 GEM Ames Advanced Trials: 1764302

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDDG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
19	GEMS-0277/MBS5411	70.3%	151.0	8.7	17.5	3.1	11.6	8	58.3	0	285	125	80.0
	Number Locations		5	5	5	1	2	1	2	1	1	1	5
	Mean		183.0	9.8	18.9	4.0	6.5	6	57.9	1.4	291	120	87.5
	Non Check Mean		178.8	9.7	18.7	4.4	6.5	6	57.9	1.0	292	121	87.3
	Check Mean		214.8	10.6	20.6	1.6	6.6	7	58.2	3.8	283	114	88.5
	CV (Error)		11.3	12.5	5.1		112.5		2.2				13.5

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Mount Pleasant, and Harcourt in Iowa

2017 GEM Ames Advanced Trials: 1764303

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
33	MBS3520/MBS8814	102.5%	211.9	10.2	21.2	0.7	1.3	8	55.3	11	305	117	89.9
32	MBS2655/MBS9508	101.9%	210.7	10.7	20.4	3.0	2.7	6	56.8	0	278	102	94.7
34	Pioneer 33F85	101.6%	210.1	10.5	20.6	6.8	0.0	5	56.5	1	282	107	87.9
5	GEMS-0226/MBS6312	99.1%	204.9	10.3	20.4	2.4	7.3	6	57.2	0	293	132	90.1
36	Pioneer 31N27	98.3%	203.3	9.4	22.3	13.3	11.6	8	57.4	4	272	107	92.8
2	GEMS-0147/MBS6312	98.0%	202.6	10.3	20.3	2.2	4.4	4	56.1	0	290	118	94.8
23	GEMS-0279/MBS6312	97.4%	201.4	10.2	20.1	8.3	7.4	7	56.1	2	290	118	89.5
6	GEMS-0227/MBS6312	96.1%	198.7	11.3	18.1	5.0	0.9	8	56.8	1	277	90	96.6
10	GEMS-0240/MBS6312	95.8%	198.2	10.2	20.2	2.9	4.4	4	56.8	0	283	117	90.9
35	Pioneer 34R65	95.8%	198.1	10.2	19.9	1.5	0.9	8	55.5	0	267	102	92.5
13	GEMS-0251/MBS6312	94.7%	195.8	10.2	19.6	8.3	2.2	7	56.5	0	285	122	86.9
16	GEMS-0264/MBS6312	94.5%	195.5	9.4	21.2	2.6	5.9	9	54.3	0	285	113	90.6
3	GEMS-0148/MBS6312	94.0%	194.4	10.3	19.5	1.4	7.1	5	55.7	0	288	100	93.2
12	GEMS-0250/MBS6312	92.2%	190.7	9.5	20.6	11.8	24.8	4	55.8	0	290	103	93.2
15	GEMS-0263/MBS6312	91.6%	189.5	9.6	20.1	2.2	1.5	9	56.2	5	283	123	91.5
25	GEMS-0281/MBS6312	90.7%	187.6	9.9	19.3	0.8	7.2	4	56.1	1	300	98	89.8
14	GEMS-0262/MBS6312	90.3%	186.7	9.3	20.6	0.8	11.1	8	56.0	4	283	113	91.5
21	GEMS-0276/MBS6312	90.0%	186.2	10.3	18.1	0.9	5.9	6	56.7	5	285	102	90.9
24	GEMS-0280/MBS6312	88.8%	183.7	9.5	19.7	1.7	5.4	5	57.4	3	285	117	87.5
4	GEMS-0218/MBS6312	87.1%	180.1	9.6	19.2	0.0	0.9	6	56.6	0	275	110	92.9
26	GEMS-0282/MBS6312	86.8%	179.6	9.2	20.7	6.5	3.2	5	56.2	2	292	115	91.7
11	GEMS-0248/MBS6312	86.8%	179.4	9.5	19.2	14.0	0.0	8	56.0	2	287	115	87.5
19	GEMS-0269/MBS6312	86.7%	179.2	10.0	18.9	1.6	20.0	5	55.7	0	263	108	85.4
18	GEMS-0268/MBS6312	85.7%	177.2	8.8	20.5	2.2	47.9	4	54.9	0	275	127	91.7
31	PHT11/MBS6312	83.4%	172.4	9.7	18.4	0.7	2.2	6	57.5	0	283	102	90.9
7	GEMS-0228/MBS6312	83.3%	172.3	9.1	18.9	5.2	5.6	5	56.9	0	280	117	91.0
9	GEMS-0237/MBS6312	83.0%	171.7	9.7	18.7	6.2	1.4	8	55.4	0	273	115	89.3
17	GEMS-0265/MBS6312	82.8%	171.3	8.9	19.6	1.8	7.2	7	56.8	1	292	117	89.3
20	GEMS-0275/MBS6312	82.1%	169.7	8.5	20.5	0.0	9.3	6	56.3	2	282	102	82.5
1	MBS6312/GEMS-0234	81.8%	169.2	9.3	18.8	0.9	0.9	6	57.1	0	270	108	87.3
8	GEMS-0235/MBS6312	80.2%	165.9	8.7	20.1	3.6	16.5	6	57.2	0	280	105	94.4
22	GEMS-0277/MBS6312	79.5%	164.5	9.1	18.2	3.2	1.3	7	56.6	0	278	117	88.2
28	GEMS-0284/MBS6312	79.1%	163.6	8.6	19.4	25.4	16.2	5	56.2	0	293	118	92.8
30	PHR47/MBS6312	79.1%	163.5	9.4	17.5	1.6	0.6	5	56.5	0	272	105	88.8
29	PHB47/MBS6312	78.5%	162.3	9.3	17.9	0.0	19.2	4	57.4	0	278	98	90.2

2017 GEM Ames Advanced Trials: 1764303

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
27	GEMS-0283/MBS6312	74.0%	153.1	8.4	18.8	2.7	3.2	9	57.2	0	278	100	95.7
	Number Locations		7	7	7	2	3	1	4	1	1	1	7
	Mean		184.6	9.6	19.7	4.2	7.4	6	56.4	1.2	283	111	90.7
	Non Check Mean		181.0	9.5	19.5	4.1	8.1	6	56.4	0.9	283	111	90.5
	Check Mean		206.8	10.2	20.9	5.0	3.3	7	56.3	3.2	281	107	91.5
	CV (Error)		10.4	11.4	6.8	113.5	138.1		2.4				6.6

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Mount Pleasant, and Harcourt in Iowa; and Capron in Illinois

2017 GEM Ames Advanced Trials: 1764304

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLGD	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
36	Pioneer 31N27	106.3%	227.4	10.9	21.1	21.6	3.7	7	58.8	1	300	113	92.8
34	Pioneer 33F85	103.6%	221.7	11.4	19.6	13.7	1.3	7	58.2	3	300	123	91.2
33	MBS3520/MBS8814	101.6%	217.4	10.8	20.4	10.6	4.8	5	56.0	6	293	115	91.0
32	MBS2655/MBS9508	98.3%	210.3	11.4	18.6	0.0	7.2	7	58.7	5	295	95	92.4
35	Pioneer 34R65	90.0%	192.6	10.3	18.9	0.0	2.7	8	57.3	0	270	117	91.0
18	GEMS-0268/MBS8234	88.5%	189.2	10.5	18.2	0.0	10.8	4	58.0	2	295	120	89.4
1	MBS8234/GEMS-0240	88.4%	189.1	10.0	19.1	12.5	13.3	5	58.1	0	283	117	93.3
2	GEMS-0147/MBS8234	88.2%	188.7	10.6	18.3	0.0	4.4	5	58.4	0	300	123	91.9
12	GEMS-0250/MBS8234	87.4%	187.0	10.4	18.1	14.3	17.8	3	59.0	0	300	125	93.8
16	GEMS-0264/MBS8234	85.8%	183.5	10.0	18.5	3.0	2.3	6	57.7	0	292	117	87.5
5	GEMS-0226/MBS8234	85.6%	183.1	11.1	16.6	8.8	2.9	9	59.3	1	298	120	89.1
15	GEMS-0263/MBS8234	85.3%	182.4	10.2	17.9	0.0	0.0	8	59.6	1	287	127	91.0
6	GEMS-0227/MBS8234	84.5%	180.7	10.6	17.2	1.4	1.3	8	59.2	0	287	92	91.9
23	GEMS-0281/MBS8234	84.4%	180.5	10.4	17.5	0.0	4.4	7	57.9	1	287	107	95.2
31	PHW51/MBS8234	84.2%	180.2	10.8	17.0	8.3	4.1	9	57.4	0	275	108	97.0
14	GEMS-0262/MBS8234	83.5%	178.7	10.7	16.8	0.0	2.7	7	59.0	14	280	115	96.1
3	GEMS-0148/MBS8234	83.3%	178.2	10.7	16.7	2.9	1.8	7	57.4	1	295	107	90.1
21	GEMS-0279/MBS8234	82.7%	176.9	10.2	17.6	5.4	0.0	8	58.4	0	277	102	92.6
13	GEMS-0251/MBS8234	82.2%	175.8	9.6	18.6	6.3	9.9	5	57.8	1	295	112	86.8
24	GEMS-0282/MBS8234	82.2%	175.8	9.6	18.4	4.3	4.1	6	58.4	0	310	120	93.8
22	GEMS-0280/MBS8234	81.6%	174.5	9.9	17.8	3.1	2.2	6	58.7	15	275	110	90.5
11	GEMS-0248/MBS8234	81.4%	174.2	9.7	18.6	1.5	5.4	9	59.1	0	290	112	95.2
9	GEMS-0235/MBS8234	80.0%	171.1	10.1	17.2	2.6	18.5	5	59.0	0	290	108	90.8
17	GEMS-0265/MBS8234	79.8%	170.7	10.1	17.1	4.8	0.5	8	59.1	0	277	118	95.6
25	GEMS-0283/MBS8234	79.4%	169.9	10.0	17.2	0.0	2.9	7	59.0	2	270	102	92.8
8	GEMS-0234/MBS8234	79.4%	169.8	10.3	16.6	4.5	2.7	8	58.9	0	270	102	92.4
19	GEMS-0269/MBS8234	77.8%	166.5	9.8	17.1	0.0	18.1	8	58.6	0	290	125	89.1
10	GEMS-0237/MBS8234	77.4%	165.6	10.3	16.3	7.9	6.8	6	58.6	0	280	113	97.0
27	GEMS-0284/MBS8234	76.8%	164.3	9.7	16.9	10.0	20.3	6	57.1	0	308	123	92.8
7	GEMS-0228/MBS8234	76.4%	163.5	9.8	16.9	2.7	7.8	6	59.1	0	288	110	88.7
29	PHR47/MBS8234	76.2%	163.0	10.0	16.4	3.0	0.0	8	58.8	0	290	100	91.0
28	PHB47/MBS8234	75.4%	161.3	9.7	16.8	0.0	9.7	7	59.2	0	278	100	92.4
30	PHT11/MBS8234	71.8%	153.5	8.9	17.3	3.1	0.0	9	58.0	1	287	113	89.6
4	GEMS-0218/MBS8234	69.9%	149.5	9.2	16.7	2.9	4.8	9	58.5	0	272	108	88.2
20	GEMS-0277/MBS8234	65.9%	141.0	8.6	16.3	3.0	1.3	9	58.2	0	273	110	87.7

2017 GEM Ames Advanced Trials: 1764304

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
26	GEMS-0275/MBS8234	63.1%	134.9	7.3	19.1	3.2	6.5	6	58.8	1	293	115	82.9
	Number Locations		6	6	6	1	3	1	3	1	1	1	6
	Mean		177.6	10.1	17.8	4.6	5.8	7	58.4	1.5	288	112	91.5
	Non Check Mean		171.7	10.0	17.4	3.9	6.1	7	58.5	1.3	287	112	91.5
	Check Mean		213.9	11.0	19.7	9.2	4.0	7	57.8	3.0	292	113	91.7
	CV (Error)		8.9	9.5	4.7		103.6		2.0				8.2

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, Mount Pleasant, and Harcourt in Iowa

2017 GEMS Ames Advanced Trials: 1764305

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
33	Pioneer 31D58	108.2%	216.3	10.6	20.4	0.7	4.2	8	58.2	0	272	117	96.0
34	Pioneer 33F85	107.3%	214.6	11.3	19.0	11.1	0.0	8	56.4	2	267	111	93.2
36	Pioneer 31N27	103.6%	207.2	10.7	19.6	2.8	13.9	7	57.3	1	267	102	97.7
32	MBS3520/MBS8814	100.9%	201.8	10.9	18.7	9.2	0.0	6	54.3	13	285	104	99.2
31	MBS2655/MBS9508	99.9%	199.8	11.3	17.8	2.2	0.0	8	58.0	3	274	104	94.6
17	GEMS-0268/MBS9451	99.9%	199.8	9.8	20.4	4.2	0.0	6	54.2	4	283	114	97.6
12	GEMS-0251/MBS9451	98.1%	196.2	10.1	19.5	3.3	0.0	8	54.4	0	276	109	89.0
4	GEMS-0226/MBS9451	97.5%	194.9	9.8	19.8	1.6		8	55.0	0	285	110	93.8
1	GEMS-0147/MBS9451	96.2%	192.4	9.8	19.5	3.0	0.0	9	55.2	0	279	119	95.8
21	GEMS-0280/MBS9451	95.7%	191.4	9.7	19.7	0.9	0.0	7	55.0	7	267	109	90.1
10	GEMS-0248/MBS9451	95.7%	191.3	10.1	18.9	0.9	0.0	8	55.3	0	282	118	93.0
5	GEMS-0227/MBS9451	95.4%	190.8	10.9	17.5	0.8	0.0	9	55.8	0	282	96	90.2
8	GEMS-0237/MBS9451	95.1%	190.2	10.8	17.6	18.0	0.0	9	53.8	1	282	114	94.4
27	PHT47/MBS9451	94.9%	189.7	10.7	17.8	3.8	0.0	9	56.8	0	287	112	96.1
15	GEMS-0264/MBS9451	92.8%	185.5	9.3	20.1	0.0		6	53.5	0	276	101	95.7
30	R3212Z/MBS9451	92.5%	185.0	10.6	17.6	0.0	0.0	8	56.0	0	258	89	93.4
26	PHT11/MBS9451	91.8%	183.5	10.7	17.3	0.0	0.0	8	56.0	0	269	101	91.2
28	PHW51/MBS9451	91.3%	182.5	10.2	17.9	3.6	0.0	8	55.4	0	266	120	98.5
9	GEMS-0240/MBS9451	91.2%	182.3	9.3	19.6	8.4	0.0	6	55.0	0	289	119	91.7
13	GEMS-0262/MBS9451	91.0%	181.9	9.7	18.7	1.4	0.0	7	55.3	2	274	124	101.1
29	F9214Z/MBS9451	91.0%	181.9	8.8	20.7	5.9	0.0	7	55.7	0	268	111	89.2
18	GEMS-0269/MBS9451	90.3%	180.5	10.3	17.6	4.2	0.0	7	54.9	0	262	107	87.6
6	GEMS-0228/MBS9451	88.8%	177.5	10.0	17.8	6.6	0.0	8	55.1	0	277	98	90.5
35	Pioneer 34R65	88.3%	176.6	10.0	17.7	0.0	0.0	9	58.4	2	249	87	94.4
11	GEMS-0250/MBS9451	88.2%	176.3	8.6	20.9	8.9	0.0	3	54.9	0	280	121	91.5
25	PHR47/MBS9451	87.4%	174.8	9.5	18.6	2.4	0.0	8	55.6	0	279	94	95.7
22	GEMS-0281/MBS9451	87.0%	173.9	9.7	18.2	2.3	0.0	7	55.1	1	265	96	88.4
23	GEMS-0282/MBS9451	86.6%	173.1	8.7	19.9	10.1	3.2	5	54.4	1	285	121	94.2
24	GEMS-0284/MBS9451	85.2%	170.4	9.0	19.1	4.8	4.7	8	55.4	1	283	115	93.7
2	GEMS-0148/MBS9451	84.4%	168.7	8.8	19.2	1.5	0.0	7	55.6	0	275	113	92.7
19	GEMS-0275/MBS9451	84.4%	168.7	8.4	20.3	0.8	7.8	7	56.9	2	278	98	90.1
3	GEMS-0218/MBS9451	83.7%	167.3	9.0	18.5	1.4	0.0	8	55.2	3	263	108	95.7
14	GEMS-0263/MBS9451	83.5%	166.9	8.3	20.1	3.7	0.0	9	55.8	3	274	114	92.2
7	GEMS-0234/MBS9451	82.2%	164.4	9.1	17.9	0.8	0.0	8	56.4	0	277	96	92.5
20	GEMS-0279/MBS9451	80.0%	159.9	7.7	20.7	2.3	0.0	9	55.4	0	279	101	87.5

2017 GEMS Ames Advanced Trials: 1764305

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDG	S Rtdg Rtg	TWT	% GNSNP	PLTHT (cm)	EARHT (cm)	% STAND
16	GEMS-0265/MBS9451	79.3%	158.6	8.9	17.7	2.1	0.0	7	56.2	2	252	105	97.8
	Number Locations		7	7	7	2	1	1	3	1	2	2	7
	Mean		183.3	9.8	18.7	3.9	1.0	8	55.6	1.3	274	108	93.4
	Non Check Mean		180.0	9.6	18.8	3.8	0.6	7	55.3	0.9	275	108	92.9
	Check Mean		200.0	10.8	18.5	4.3	3.0	8	56.9	3.5	269	104	95.9
	CV (Error)		9.0	10.2	4.5	127.1			2.4		4.8	8.1	7.1

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, Carroll, and Mount Pleasant in Iowa; Lewiston in North Carolina; and Farmersville in Illinois

2017 GEM Ames Advanced Trials: 1764306

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
69	Pioneer 31D58	110.7%	220.6	11.6	19.6	0.5	2.0	9	56.5	283	113	94.8
28	GEMS-0226/MBS8668	107.8%	214.7	10.8	19.7	1.5	0.0	9	54.6	306	129	94.8
40	GEMS-0264/MBS8668	107.3%	213.7	10.6	20.3	3.3	13.2	6	51.9	299	118	96.8
70	Pioneer 33F85	107.2%	213.5	11.4	19.0	2.4	0.0	8	56.7	284	106	96.6
5	MBS6780/GEMS-0251	107.2%	213.5	10.6	20.4	17.4	10.2	5	54.1	296	128	94.4
15	GEMS-0264/MBS6780	106.8%	212.7	9.9	21.5	4.8	4.5	6	54.3	294	132	95.0
12	GEMS-0226/MBS6780	106.6%	212.4	10.7	19.9	2.5	6.1	8	53.5	284	129	93.4
38	GEMS-0251/MBS8668	104.7%	208.6	11.1	19.0	12.6	9.4	5	52.7	298	109	94.2
2	MBS6780/GEMS-0227	102.2%	203.6	10.8	18.9	2.1	1.5	8	56.3	289	108	92.4
33	GEMS-0235/MBS8668	102.1%	203.4	11.2	18.5	4.0	5.1	6	56.5	293	112	89.6
66	B73/MBS8668	101.5%	202.2	11.2	18.4	12.2	12.3	5	56.7	304	127	97.6
60	F9214Z/MBS6780	101.2%	201.6	9.9	20.6	13.4	4.0	7	51.6	287	113	93.2
30	MBS2535/MBS8668	100.9%	200.9	12.6	16.2	3.2	12.8	7	55.7	272	102	95.3
64	PASCO14:S212612-B-032-001/MBS6780	100.5%	200.2	8.8	23.0	2.0	5.1	9	53.8	291	124	91.1
49	GEMS-0284/MBS8668	100.1%	199.4	11.1	18.1	1.5	0.0	4	56.1	272	109	97.1
29	GEMS-0227/MBS8668	100.1%	199.3	11.4	17.5	4.0	1.0	6	58.2	286	102	89.9
4	MBS6780/GEMS-0248	99.9%	199.0	10.7	18.8	2.4	0.0	8	57.5	284	124	95.4
13	GEMS-0250/MBS6780	99.6%	198.4	9.5	21.1	8.1	25.0	4	52.7	309	124	94.6
42	GEMS-0268/MBS8668	99.4%	198.1	10.6	18.9	3.1	56.6	7	53.7	297	118	95.2
16	GEMS-0268/MBS6780	99.2%	197.7	9.8	20.2	2.0	47.5	7	53.2	294	134	91.7
62	F9214Z/MBS8668	99.2%	197.6	10.9	18.7	7.2	6.1	7	54.9	287	116	97.3
53	MBS6780/PHT47	98.9%	197.0	11.0	18.2	8.5	1.9	8	55.4	298	114	99.9
46	GEMS-0280/MBS8668	97.8%	194.9	10.8	18.5	0.0	5.0	8	55.7	289	113	100.1
72	Pioneer 31N27	97.8%	194.9	10.2	19.3	3.9	1.0	7	54.9	269	98	94.2
21	GEMS-0280/MBS6780	97.7%	194.7	9.8	20.0	2.4	0.0	7	56.5	287	128	96.4
34	GEMS-0237/MBS8668	97.6%	194.4	11.8	16.6	4.0	7.9	8	54.7	291	111	94.4
67	MBS2655/MBS9508	97.5%	194.2	10.8	18.0	0.5	0.5	7	57.5	285	104	97.2
26	GEMS-0148/MBS8668	97.1%	193.5	10.4	18.7	3.2	1.5	6	53.1	309	119	94.6
24	MBS8668/GEMS-0269	96.2%	191.6	10.7	18.0	3.7	6.7	4	54.4	287	112	90.1
20	GEMS-0278/MBS6780	96.0%	191.3	10.1	18.9	5.9	1.7	7	54.1	283	117	91.3
22	GEMS-0284/MBS6780	95.9%	191.1	9.5	20.3	7.8	8.3	6	55.7	312	139	89.9
61	R3212Z/MBS6780	95.9%	191.0	10.2	18.7	6.6	0.0	7	53.5	265	100	94.3
7	MBS6780/GEMS-0269	95.3%	189.9	10.0	19.1	5.7	11.1	5	57.0	281	117	94.0
36	GEMS-0248/MBS8668	95.1%	189.5	11.0	17.7	3.4	4.9	9	56.3	286	109	95.4
58	PHR61/MBS8668	95.1%	189.5	10.9	17.4	0.6	2.1	8	54.8	293	106	92.3

2017 GEM Ames Advanced Trials: 1764306

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
48	GEMS-0283/MBS8668	95.1%	189.4	10.5	18.1	4.7	2.9	6	58.8	291	107	98.6
65	PASCO14:S212612-B-032-001/MBS8668	94.8%	188.8	9.2	20.8	0.0	0.5	7	55.1	291	101	97.1
27	GEMS-0218/MBS8668	94.6%	188.5	10.9	17.4	2.4	4.0	7	55.4	289	105	98.1
68	MBS3520/MBS8814	94.5%	188.2	10.6	17.9	2.5	4.4	7	54.2	281	104	95.8
41	GEMS-0265/MBS8668	94.5%	188.2	10.5	18.2	2.5	2.3	8	56.2	296	114	95.0
31	GEMS-0234/MBS8668	94.0%	187.3	11.0	17.5	5.8	0.0	8	57.0	290	109	89.6
59	PHW51/MBS8668	93.7%	186.6	10.3	18.2	4.9	0.0	8	55.5	290	116	95.3
25	GEMS-0147/MBS8668	93.6%	186.4	10.2	18.6	8.8	3.5	6	55.6	299	124	94.0
63	R3212Z/MBS8668	93.0%	185.2	10.4	18.3	3.8	7.3	6	55.3	271	105	90.9
9	MBS6780/GEMS-0281	92.9%	185.0	9.9	18.8	1.0	4.8	6	56.1	285	115	95.3
3	MBS6780/GEMS-0240	92.7%	184.6	9.5	19.7	1.5	15.6	4	56.1	296	125	91.5
8	MBS6780/GEMS-0279	92.1%	183.5	9.4	19.6	17.7	9.6	7	57.4	289	110	94.4
45	GEMS-0279/MBS8668	91.8%	182.8	9.6	19.0	4.4	1.0	7	55.3	295	110	94.0
14	GEMS-0263/MBS6780	91.7%	182.6	8.8	20.7	4.0	0.0	8	56.6	291	124	90.6
32	GEMS-0275/MBS8668	91.6%	182.5	9.3	20.0	2.4	22.7	6	56.0	301	104	94.0
71	Pioneer 34R65	90.8%	180.9	10.5	17.3	1.5	0.5	9	57.9	268	83	99.9
47	GEMS-0281/MBS8668	90.8%	180.9	9.9	18.3	5.8	13.6	7	54.9	308	115	94.9
1	MBS6780/GEMS-0218	90.7%	180.6	9.5	19.3	8.3	1.5	7	56.6	274	115	95.6
55	MBS8668/PHT11	90.5%	180.2	10.5	17.4	2.9	4.3	6	55.2	287	106	92.5
6	MBS6780/GEMS-0262	90.4%	180.1	9.7	19.1	2.3	0.0	7	57.3	284	122	84.8
18	GEMS-0276/MBS6780	90.3%	179.9	9.5	19.3	15.0	2.0	8	55.5	291	129	95.2
56	MBS8668/PHT47	89.9%	179.0	10.0	18.1	4.6	0.5	9	56.6	296	109	97.5
51	MBS6780/PHR61	89.7%	178.6	9.8	18.5	1.0	0.5	8	56.0	281	117	96.4
43	GEMS-0276/MBS8668	89.4%	178.1	10.2	18.2	3.4	5.8	7	54.8	299	113	96.2
52	MBS6780/PHT11	89.4%	178.0	10.0	17.8	11.7	40.0	8	54.2	298	126	97.2
50	MBS6780/PHR47	87.9%	175.0	9.5	18.6	1.0	2.0	6	56.0	304	128	90.9
54	PHW51/MBS6780	87.8%	174.9	9.7	18.3	3.7	0.0	7	54.4	287	114	96.0
37	GEMS-0250/MBS8668	87.8%	174.8	9.3	19.1	10.0	52.4	3	55.9	308	123	98.2
57	PHR47/MBS8668	87.7%	174.7	10.2	17.2	3.1	0.5	7	57.4	298	109	90.5
10	MBS6780/GEMS-0283	87.4%	174.2	9.0	19.4	3.4	4.0	6	57.6	279	120	94.0
11	GEMS-0148/MBS6780	87.1%	173.5	8.6	20.0	3.6	5.1	7	54.8	273	122	92.8
23	MBS8668/GEMS-0263	86.6%	172.5	9.3	18.8	1.4	2.4	8	53.0	293	119	95.5
35	GEMS-0240/MBS8668	86.0%	171.3	9.6	18.4	8.7	9.3	3	55.3	310	131	85.6
44	GEMS-0277/MBS8668	85.6%	170.5	10.3	16.5	8.1	0.0	7	53.2	299	119	96.4
17	GEMS-0275/MBS6780	83.1%	165.6	8.1	20.7	0.5	4.8	4	55.7	278	120	91.3

2017 GEM Ames Advanced Trials: 1764306

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
19	GEMS-0277/MBS6780	78.8%	157.0	9.3	17.0	2.4	5.1	7	58.0	279	115	96.4
39	GEMS-0262/MBS8668	67.6%	134.7	8.2	16.4					295	115	100.0

Number Locations			6	6	6	3	3	1	1	2	2	6
Mean			189.8	10.2	18.8	4.7	7.2	7	55.4	290	115	94.3
Non Check Mean			188.8	10.1	18.9	4.9	7.6	7	55.3	291	116	94.1
Check Mean			199.2	10.9	18.5	3.4	3.0	7	56.3	282	105	96.6
CV (Error)			9.8	11.8	6.0	117.8	118.6			2.9	6.4	6.4

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Carroll in Iowa; Lewiston in North Carolina; and Vigo in Indiana

2017 GEM Ames Advanced Trials: 1764307

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDTG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
68	Pioneer 31D58	109.1%	209.6	10.4	20.9	1.5	2.3	7	55.9	281	111	91.0
24	GEMS-0147/MBS8731	106.8%	205.2	9.7	21.8	2.4	2.6	7	52.4	293	110	89.3
72	MBS2655/MBS8731	105.2%	202.1	10.6	19.4	4.3	0.0	8	52.3	295	105	95.7
33	GEMS-0250/MBS8731	104.9%	201.6	9.3	21.9	9.3	18.9	6	53.2	294	116	90.9
69	Pioneer 33F85	104.1%	200.0	10.0	20.4	1.0	3.9	8	57.5	269	108	94.4
54	PHW51/MBS6858	104.0%	199.7	10.8	18.9	1.5	1.9	6	53.9	284	117	92.0
40	GEMS-0269/MBS8731	103.9%	199.6	10.5	19.5	1.6	5.8	8	53.8	284	108	90.7
67	MBS3520/MBS8814	103.9%	199.5	10.6	19.3	2.6	12.1	7	53.5	289	116	91.1
34	GEMS-0251/MBS8731	103.4%	198.7	9.5	21.4	3.8	2.0	7	52.1	292	161	95.7
29	GEMS-0227/MBS8731	103.2%	198.3	10.5	19.1	1.0	0.8	8	55.6	283	102	89.9
36	GEMS-0263/MBS8731	102.6%	197.1	10.0	20.1	2.5	2.3	9	54.1	294	116	89.4
37	GEMS-0264/MBS8731	102.3%	196.6	9.8	20.1	2.0	3.5	8	53.0	284	109	92.6
31	GEMS-0235/MBS8731	102.3%	196.5	9.7	20.5	4.0	0.0	8	52.8	297	120	89.0
30	GEMS-0228/MBS8731	102.2%	196.4	10.0	19.8	4.6	2.7	7	53.7	283	107	92.1
4	GEMS-0227/MBS6858	101.6%	195.2	10.6	18.8	1.1	0.8	8	55.3	299	103	93.7
20	GEMS-0281/MBS6858	101.5%	194.9	9.6	20.6	0.3	0.4	6	53.3	299	114	94.1
39	GEMS-0268/MBS8731	101.0%	194.0	10.0	20.2	3.5	40.6	7	52.0	299	119	95.3
63	R3212Z/MBS8731	100.5%	193.1	10.3	19.0	1.5	0.0	8	54.1	271	96	90.9
1	GEMS-0147/MBS6858	100.1%	192.2	9.4	20.8	5.9	7.1	4	53.1	307	129	86.8
58	PHT47/MBS8731	99.7%	191.5	9.5	20.7	0.6	2.7	9	55.1	303	113	91.1
12	GEMS-0262/MBS6858	99.6%	191.3	9.5	20.8	4.7	10.3	5	54.0	285	114	92.4
48	GEMS-0284/MBS8731	99.5%	191.2	9.6	20.3	7.1	8.9	7	54.9	317	125	92.3
35	GEMS-0262/MBS8731	99.0%	190.1	9.1	21.6	2.5	4.6	9	53.2	276	104	93.3
5	GEMS-0228/MBS6858	98.7%	189.6	9.5	20.7	3.5	31.9	5	53.5	287	114	92.5
66	MBS2655/MBS9508	98.4%	189.0	10.2	19.0	0.0	1.9	7	58.1	287	96	90.5
47	GEMS-0281/MBS8731	98.4%	189.0	9.9	19.8	0.0	0.0	8	54.3	279	105	90.7
71	Pioneer 31N27	98.4%	189.0	9.4	20.9	3.0	19.3	8	57.8	284	109	87.9
41	GEMS-0275/MBS8731	97.4%	187.2	9.1	21.0	0.5	16.7	7	55.2	290	116	92.6
11	GEMS-0251/MBS6858	97.1%	186.5	8.3	23.2	4.5	26.0	4	52.5	299	133	89.2
28	GEMS-0226/MBS8731	97.0%	186.4	8.9	21.3	4.6	8.1	8	55.0	291	118	89.6
25	GEMS-0148/MBS8731	97.0%	186.3	9.4	20.5	3.0	3.4	8	52.8	278	113	96.4
64	PASCO14:S212612-B-032-001/MBS6858	96.9%	186.2	8.4	22.7	1.0	14.4	7	52.7	287	119	92.7
19	GEMS-0280/MBS6858	96.8%	185.9	8.7	21.9	1.2	4.1	6	52.7	294	116	93.3
65	PASCO14:S212612-B-032-001/MBS8731	96.7%	185.8	8.3	23.0	3.3	4.2	7	52.9	283	118	90.8
6	GEMS-0234/MBS6858	96.1%	184.6	9.1	20.6	4.0	2.6	6	54.3	283	111	91.3

2017 GEM Ames Advanced Trials: 1764307

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDDG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
45	GEMS-0279/MBS8731	95.9%	184.3	9.6	19.5	7.0	0.0	9	54.7	279	106	91.5
15	GEMS-0269/MBS6858	95.7%	183.8	9.1	20.9	4.6	19.6	5	54.3	279	118	90.3
51	PHT11/MBS6858	95.6%	183.6	9.8	19.1	0.5	21.6	9	57.1	300	107	93.4
26	GEMS-0218/MBS8731	95.5%	183.5	9.9	18.8	3.1	2.3	9	53.4	269	105	92.3
55	PHR47/MBS8731	95.4%	183.3	10.1	18.5	1.4	5.2	6	55.5	289	100	95.8
52	PHT47/MBS6858	95.0%	182.4	9.5	19.8	2.6	2.1	7	55.0	299	111	93.7
14	GEMS-0268/MBS6858	94.7%	181.9	9.2	20.1	3.9	54.8	4	51.5	285	131	88.7
21	GEMS-0282/MBS6858	94.7%	181.9	9.0	20.7	6.3	40.4	4	54.5	305	132	92.8
22	GEMS-0283/MBS6858	94.6%	181.7	9.5	19.3	2.2	7.1	5	55.9	285	109	92.8
3	GEMS-0226/MBS6858	94.6%	181.7	8.8	21.3	2.6	17.6	8	53.5	316	140	89.5
57	PHT11/MBS8731	94.1%	180.7	10.3	17.9	1.6	1.1	8	55.6	292	114	91.8
17	GEMS-0276/MBS6858	93.8%	180.2	9.3	20.0	4.4	20.2	4	54.6	299	108	90.9
61	R3212Z/MBS6858	93.8%	180.1	9.2	20.0	1.9	0.0	7	53.0	282	108	91.4
46	GEMS-0280/MBS8731	93.5%	179.7	9.3	19.9	0.0	0.0	8	54.3	281	104	94.4
9	GEMS-0248/MBS6858	93.1%	178.9	9.0	20.7	3.1	9.1	7	54.9	287	109	86.5
38	GEMS-0265/MBS8731	93.1%	178.9	9.0	20.4	1.9	0.0	8	54.8	278	108	94.5
44	GEMS-0278/MBS8731	92.2%	177.1	9.7	18.7	0.8	0.0	8	54.8	288	104	92.7
27	GEMS-0234/MBS8731	92.1%	176.9	9.7	18.5	6.3	1.2	8	55.5	279	102	93.0
49	PHR47/MBS6858	91.8%	176.4	9.7	18.8	1.0	7.9	7	53.2	290	109	90.9
62	F9214Z/MBS8731	91.6%	175.9	8.4	21.2	13.3	9.9	8	53.9	288	110	90.2
32	GEMS-0248/MBS8731	90.8%	174.4	9.0	19.7	3.2	1.1	8	54.5	293	106	90.7
42	GEMS-0276/MBS8731	90.4%	173.6	9.1	19.7	3.6	2.9	8	54.2	279	103	92.1
60	PHW51/MBS8731	89.8%	172.5	9.5	18.5	4.3	3.4	8	53.5	292	110	90.7
8	GEMS-0240/MBS6858	89.5%	172.0	8.1	22.0	3.9	23.5	6	52.4	297	131	92.3
10	GEMS-0250/MBS6858	89.5%	172.0	7.8	22.6	3.5	83.1	3	51.7	302	124	92.7
16	GEMS-0275/MBS6858	88.8%	170.5	8.0	21.8	1.4	44.7	5	54.6	294	109	91.9
13	GEMS-0263/MBS6858	88.5%	170.0	8.4	20.8	2.8	12.1	9	55.0	283	134	90.1
53	PHT55/MBS6858	88.1%	169.2	8.3	20.6	0.9	14.3	7	56.2	289	112	92.1
56	PHR61/MBS8731	87.7%	168.5	9.1	19.1	1.2	0.4	9	56.6	285	105	91.6
50	PHR61/MBS6858	87.4%	167.9	8.9	19.5	1.1	1.1	8	56.5	294	102	90.1
7	GEMS-0237/MBS6858	87.1%	167.3	9.7	17.7	2.4	26.5	6	53.3	289	115	96.0
2	GEMS-0218/MBS6858	86.7%	166.6	8.7	19.8	2.9	0.0	7	54.6	270	101	92.7
59	PHT55/MBS8731	86.5%	166.1	8.3	20.8	2.0	0.7	8	54.5	299	121	90.0
70	Pioneer 34R65	86.2%	165.6	9.1	18.3	2.1	1.5	8	57.8	259	85	95.0
23	GEMS-0284/MBS6858	84.9%	163.1	8.1	20.7	5.5	35.1	4	54.6	289	104	95.7

2017 GEM Ames Advanced Trials: 1764307

Entry	Pedigree	% Check Avg	Yield (bu/ac)	Y/M	MOIST	% SKLDG	% RTLDDG	S Rtdg Rtg	TWT	PLTHT (cm)	EARHT (cm)	% STAND
18	GEMS-0277/MBS6858	82.8%	159.1	8.5	19.1	2.2	1.1	5	55.4	284	119	81.8
43	GEMS-0277/MBS8731	81.1%	155.7	8.7	18.3	1.4	0.0	9	55.1	265	104	96.1
	Number Locations		8	8	8	5	4	1	3	2	2	8
	Mean		183.9	9.3	20.2	2.9	10.1	7	54.4	288	112	91.8
	Non Check Mean		183.1	9.3	20.2	3.1	10.4	7	54.1	289	113	91.8
	Check Mean		192.1	10.0	19.8	1.7	6.8	8	56.8	278	104	91.7
	CV (Error)		11.6	12.4	6.0	123.2	128.0		1.8	3.4	9.2	6.2

* All trial data will be posted on the website

** Locations: Ames, Crawfordsville, Keystone, and Carroll in Iowa; Lewiston in North Carolina; and Greensburg, Oaktown, and Vigo in Indiana

