Mississippi Corn Promotion Board 2012 Progress Report

Project Title: Standardization of Mississippi Corn Hybrid Trials

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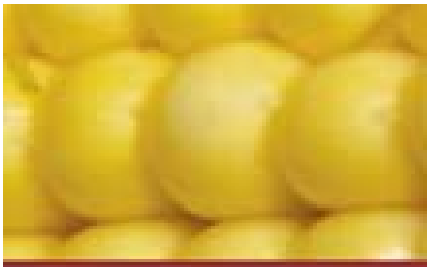
Department: MAFES Research Support—Variety Testing



Project Summary (Issue/Response)

The objective of this study is to conduct unbiased, standardized Mississippi Corn Hybrid yield trials across the corn-growing region of the state of Mississippi. During this past growing season, nine official variety trials were conducted at eight different locations within the state. These tests were conducted on both private farms, as well as on the MAFES branch experiment stations.

Participating companies were given the option to enter their hybrid in the irrigated test, non-irrigated test or both. Each company entering in the MSU variety trial is permitted to submit their hybrids with a standard fungicide and insecticide seed treatment and is also able to select the desired plant population that is best suited for that particular hybrid for the test in which it is entered.

All hybrids are tested using a Randomized Complete Block design with four replications. Plots were planted with a belted cone ALMACO plot planter. Each pot consists of two rows in a 30-inch row spacing having a plot length of 15 feet. Cultural practices are followed throughout the growing season in order to obtain optimum yields. Plots are harvested with an ALMACO SPC-40 plot combine. Seed weight and moisture are captured for each plot during harvest and yield data are then calculated and statistically analyzed. The results are then published annually in the Mississippi State University Corn for Grain Hybrid Trials publications, as well as being posted on MSUcares.

Project Results/Outcomes

In 2012 seventy-seven corn hybrids were evaluated for yield performance in four tests at three irrigated locations, while seventy-five corn hybrids were evaluated for yield performance at five different dryland locations in Mississippi. The tests sites were located in Area I, five non-irrigated tests in the Hill section of Mississippi, and Area II, four irrigated tests in the Mississippi Delta. Five test sites were located on MAFES branch stations and four test sites were located on producer farms.

Project Result—2012 Corn Hybrid Yield Summary for Dryland Locations

2012 Corn hybrid yield summary for dryland locations.

Brand	Hybrid Number	Aberdeen	Brooksville	Hernando	Newton	Raymond	Overall Average
		bu/A	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*
AgriGold	A6489VT3	132.6	78.8	111.0	80.7	102.5	101.1
AgriGold	A6517VT3 PRO	133.1	83.3	79.5	84.8	97.1	95.6
AgriGold	A6533VT2 RIB	126.3	72.0	97.0	81.3	99.4	95.2
AgriGold	A6553VT2 RIB	127.6	71.1	66.4	102.2	90.6	91.6
AgriGold	A6573VT3 PRO	121.2	66.1	83.4	49.7	104.0	84.9
AgriGold	A6632VT2 RIB	110.4	90.2	76.2	99.3	85.6	92.3
AgriGold	A6659VT2 PRO	102.2	75.6	74.5	94.0	115.8	92.4
AgriGold	A6679VT2 RIB	102.9	79.4	84.1	101.1	96.0	92.7
Armor	Armor 1133 PRO3	121.2	93.5	93.1	86.2	91.8	97.2
Armor	Armor 1262 PRO2	134.2	87.4	97.8	77.9	97.4	98.9
Armor	Armor 1415 PRO3	114.9	85.9	79.5	70.0	107.2	91.5
Armor	Armor 1550 PRO3	115.2	83.0	103.5	104.7	104.9	102.3
Armor	Armor 1655 PRO2	141.8	90.5	81.5	82.7	99.9	99.3
Armor	Armor 1770 PRO3	132.9	80.4	65.6	75.0	89.1	88.6
Armor	Armor AXC2114 PRO3	138.3	81.1	93.8	99.3	85.5	99.6
Armor	Armor AXC2118A PRO3	113.2	76.7	89.2	82.2	87.6	89.8
Armor	Armor AXC211A PRO3	140.0	86.6	87.3	97.4	83.5	98.9
Croplan Genet-ics	6640VT3P	137.7	101.1	96.2	99.5	103.3	107.6
Croplan Genet-ics	6960VT3P	113.5	89.9	81.4	121.5	96.7	100.6
Croplan Genet-ics	8621VT3P	120.5	97.6	101.6	97.9	87.6	101.0
Croplan Genet-ics	CPL 6926VT3/P	153.8	119.1	104.1	111.2	91.9	116.0
Croplan Genet-ics	CPL 8410VT3/P	122.4	121.0	91.9	84.4	91.4	102.2
DEKALB	DKC 61-06	128.6	91.2	101.6	99.5	107.0	105.6
DEKALB	DKC 61-88	126.6	101.6	79.3	87.1	87.9	96.5
DEKALB	DKC 62-09	107.2	87.0	94.0	78.7	119.5	97.3
DEKALB	DKC 63-87	123.4	69.1	108.3	65.4	95.4	92.3
DEKALB	DKC 65-67	114.3	77.4	73.7	97.8	99.0	92.4
DEKALB	DKC 66-86	130.7	116.0	97.6	71.6	92.5	101.7
DEKALB	DKC 66-97	134.9	84.7	94.5	76.7	100.5	98.3
DEKALB	DKC 67-57	120.0	73.0	85.2	88.7	96.4	92.7
DEKALB	DKC 69-29	130.6	105.3	93.0	118.4	92.1	107.9
DEKALB	DKC64-69	123.2	93.2	85.3	100.1	110.5	102.4
Delta Grow	DG 2688	102.9	56.6	96.5	71.3	113.8	88.2
Delta Grow	DG 2888	109.0	58.3	74.8	86.8	75.3	80.9
Delta Grow	DG 3588	92.1	79.6	84.7	71.3	78.5	81.2
Delta Grow	DG 3660	137.1	101.1	93.1	100.2	73.9	101.1
Delta Grow	DG 3788	90.4	80.0	78.3	78.7	71.7	79.8
Delta Grow	DG 4725	131.7	78.1	92.6	104.5	91.4	99.7

2012 Corn Hybrid Yield Summary for Dryland Locations (cont)

2012 Corn hybrid yield summary for dryland locations.

Brand	Hybrid Number	Aberdeen	Brooksville	Hernando	Newton	Raymond	Overall Average
Delta Grow	DG 4760	136.7	94.3	83.7	87.2	90.4	98.5
Delta Grow	DG 6388	105.2	57.6	78.5	74.1	99.4	83.0
Delta Grow	DG 6488	124.2	61.4	93.8	96.3	91.0	93.4
Dyna-Gro	52VC91	131.8	86.3	84.5	104.4	88.0	99.0
Dyna-Gro	CX12117	162.7	92.2	97.3	105.5	99.5	111.4
Dyna-Gro	D54VP81	115.8	99.7	83.9	97.4	93.6	98.1
Dyna-Gro	D55VP77	123.3	97.8	83.7	89.9	118.9	102.7
Dyna-Gro	D56VP10	147.5	95.7	89.2	86.1	101.4	104.0
Dyna-Gro	D56VP69	105.4	63.9	89.1	54.4	105.6	83.7
Dyna-Gro	D57VP51	106.3	84.3	80.0	74.7	85.2	86.1
Golden Acres	G5531	123.7	80.3	87.5	81.8	102.4	95.1
Golden Acres	GA 26V21	100.4	80.2	80.8	76.9	83.5	84.4
Golden Acres	GA 27V01	102.0	89.8	71.8	82.7	75.4	84.3
Golden Acres	GA28V81	136.4	94.4	82.3	88.1	87.0	97.7
NK Brand	N68B-3111	102.4	77.9	92.3	89.3	102.6	92.9
NK Brand	N77P-3111	107.9	91.6	79.5	82.2	86.8	89.6
NK Brand	N785-3111	109.7	97.2	73.4	98.8	84.5	92.7
Pioneer	33N58	112.8	106.4	92.1	92.9	107.7	102.4
Pioneer	P1303HR	118.1	64.1	91.5	89.5	74.1	87.5
Pioneer	P1615HR	109.6	58.5	79.0	74.7	82.2	80.8
Pioneer	P1636 YHR	125.3	77.4	87.1	109.0	103.2	100.4
Pioneer	P1690 HR	117.0	72.8	94.5	90.7	73.4	89.7
Pioneer	P2088YHR	115.5	84.1	96.2	100.3	91.4	97.5
REV	REV 21HR33TM	91.2	68.4	88.8	101.4	92.2	88.4
REV	REV 22BHR43TM	124.4	70.9	108.9	119.4	99.6	104.6
REV	REV 23RE73TM	115.9	76.0	95.5	99.7	76.8	92.8
REV	REV 24BHR93TM	111.4	67.1	73.6	97.5	76.2	85.2
REV	REV 25BHR63TM	113.7	97.1	73.7	102.5	62.8	90.0
REV	REV 26HR23TM	140.0	79.5	82.1	84.9	79.3	93.2
REV	REV 26HR50TM	147.1	63.5	89.5	91.4	94.8	97.3
REV	REV 27HR52TM	120.3	60.8	73.0	99.4	88.5	88.4
REV	REV 27HR83TM	100.6	78.6	103.1	72.1	83.0	87.5
REV	REV 28H29TM	119.9	50.3	82.0	79.9	81.9	82.8
REV	REV 28HR20TM	118.3	78.0	108.2	72.5	88.9	93.2
REV	REV 28HR30TM	101.0	86.7	72.9	72.0	100.8	86.7
REV	REV 28R10TM	120.3	69.8	89.3	75.8	78.7	86.8
REV	REV 29HR13TM	111.2	64.6	70.7	79.6	65.1	78.3
Mean		120.5	82.4	87.4	88.7	92.1	94.2
LSD (.10)		17.8	16.2	18	15.9	22.2	
Error df		222	222	222	222	148	
CV (%)		12.7	16.9	17.7	15.4	17.9	
Rsquare (%)		56	60	59	66	44.5	

2012 Corn Hybrid Yield Summary for Irrigated Locations

2012 corn hybrid yield summary for irrigated locations.

Brand	Hybrid number	Minter City	Rolling Fork	Stoneville	Stoneville (clay)	Overall average
		bu/A	*bu/A*	*bu/A*	*bu/A*	
AgriGold	A6489VT3	223.8	205.7	229.7	193.8	213.2
AgriGold	A6517VT3 PRO	221.3	211.4	220.1	205.2	214.5
AgriGold	A6533VT2 RIB	216.2	217.8	250.4	197.9	220.6
AgriGold	A6553VT2 RIB	207.3	167.1	225.3	189.1	197.2
AgriGold	A6573VT3 PRO	209.1	214.7	230.8	197.4	213.0
AgriGold	A6632VT2 RIB	207.2	184.9	235.9	199.8	206.9
AgriGold	A6659VT2 PRO	218.9	205.4	236.0	212.4	218.2
AgriGold	A6679VT2 RIB	210.4	207.4	225.1	191.3	208.6
Armor	Armor 1133 PRO3	217.6	175.6	222.9	182.9	199.7
Armor	Armor 1262 PRO2	212.4	192.3	221.9	178.4	201.3
Armor	Armor 1415 PRO3	202.5	196.4	218.8	173.6	197.8
Armor	Armor 1550 PRO3	232.3	201.9	232.0	184.1	212.6
Armor	Armor 1655 PRO2	189.3	216.4	210.8	170.1	196.7
Armor	Armor 1770 PRO3	211.3	189.4	208.1	186.0	198.7
Armor	Armor AXC2114 PRO3	218.2	199.7	218.2	187.7	206.0
Armor	Armor AXC2118A PRO3	228.1	204.8	210.7	200.9	211.1
Armor	Armor AXC211A PRO3	221.7	215.5	208.9	189.9	209.0
B-H Genetics	BH 8630VTTP	230.9	214.1	238.0	189.0	218.0
B-H Genetics	BH 8740VTTP	198.1	193.3	197.4	173.3	190.5
B-H Genetics	BH 8895VTTP	216.0	197.5	243.0	194.7	212.8
B-H Genetics	X11140 VT3P	212.1	184.4	228.4	199.0	206.0
B-H Genetics	XP8845VT3P	221.6	193.5	235.1	204.2	213.6
Croplan Genetics	6640VT3P	235.0	216.1	219.9	209.4	220.1
Croplan Genetics	6960VT3P	228.2	208.2	236.5	194.8	216.9
Croplan Genetics	8621VT3P	212.1	206.2	223.6	195.3	209.3
Croplan Genetics	CPL 6926VT3/P	230.9	201.6	195.9	194.6	205.7
Croplan Genetics	CPL 8410VT3/P	220.5	202.9	232.0	194.8	212.6
DEKALB	DKC 61-06	218.4	168.6	232.3	197.2	204.1
DEKALB	DKC 61-88	204.8	186.1	217.3	189.0	199.3
DEKALB	DKC 62-09	221.4	219.8	247.7	185.6	218.6
DEKALB	DKC 63-87	230.2	199.7	235.4	189.3	213.6
DEKALB	DKC 65-67	196.9	177.1	197.7	168.7	185.1
DEKALB	DKC 66-86	208.7	198.3	215.8	184.2	201.7
DEKALB	DKC 66-97	242.6	216.3	238.4	208.3	226.4
DEKALB	DKC 67-57	216.0	198.9	210.3	194.5	204.9
DEKALB	DKC 69-29	217.3	207.5	216.0	197.1	209.5
DEKALB	DKC64-69	229.8	186.9	235.2	181.0	208.2

2012 Corn Hybrid Yield Summary for Irrigated Locations (cont.)

2012 corn hybrid yield summary for irrigated locations.

Brand	Hybrid number	Minter City	Rolling Fork	Stoneville	Stoneville (clay)	Overall average
Delta Grow	DG 2688 GTCBLL	223.2	210.3	217.9	188.0	209.9
Delta Grow	DG 2888	237.0	216.3	226.7	165.4	211.4
Delta Grow	DG 3588 GTCBLL	206.7	170.9	212.9	168.5	189.8
Delta Grow	DG 3660	229.6	204.9	210.5	206.9	213.0
Delta Grow	DG 3788 GTCBLL	201.4	177.5	219.5	162.7	190.3
Delta Grow	DG 4725	194.7	171.7	202.2	180.1	187.2
Delta Grow	DG 4760	217.9	194.4	233.8	203.3	212.4
Delta Grow	DG 6388 GTCBLL	205.4	197.5	213.3	188.3	201.1
Delta Grow	DG 6488 GTCBLL	209.6	199.4	214.5	174.0	199.3
Dyna-Gro	52VC91	212.5	198.6	232.2	177.3	205.1
Dyna-Gro	CX12117	223.9	200.5	221.5	192.6	209.6
Dyna-Gro	D54VP81	228.1	201.9	234.3	191.1	213.8
Dyna-Gro	D55VP77	202.8	212.8	228.3	193.7	209.4
Dyna-Gro	D56VP10	213.2	181.3	209.8	188.7	198.3
Dyna-Gro	D56VP69	207.5	187.4	237.5	189.6	205.5
Dyna-Gro	D57VP51	220.3	221.5	240.2	196.1	219.5
Golden Acres	G5531	214.7	211.0	245.3	191.8	215.7
Golden Acres	GA 27V01	210.3	170.7	234.8	178.7	198.6
NK Brand	N72F3000GT	215.1	210.8	214.6	190.7	207.8
NK Brand	N74R 3000 GT	219.8	204.9	209.8	189.1	205.9
NK Brand	N78S-3111	202.2	213.0	232.7	192.8	210.2
Pioneer	P1615HR	242.3	207.9	220.8	188.3	214.8
Pioneer	P1739HR	228.7	210.2	228.6	186.1	213.4
Pioneer	P1745HR	227.6	209.1	224.3	180.8	210.4
Pioneer	P2023HR	240.1	219.3	232.1	210.9	225.6
Pioneer	P2088YHR	200.5	188.3	224.9	192.8	201.6
REV	REV 21HR33™	220.5	203.6	211.7	177.8	203.4
REV	REV 22BHR43™	212.5	210.3	208.2	188.9	205.0
REV	REV 23RE73™	231.5	195.2	211.7	193.2	207.9
REV	REV 24BHR93™	217.9	193.8	220.8	194.0	206.6
REV	REV 25BHR63™	194.1	187.5	214.8	189.8	196.6
REV	REV 26HR23™	225.3	194.5	224.9	191.8	209.1
REV	REV 26HR50™	238.8	204.8	240.6	196.0	220.1
REV	REV 27HR52™	205.3	194.5	209.0	178.4	196.8
REV	REV 27HR83™	223.1	197.4	216.9	175.5	203.2
REV	REV 28H29™	217.5	192.4	199.1	189.8	199.7
REV	REV 28HR20™	233.2	245.6	228.6	182.3	222.4
REV	REV 28HR30™	228.6	192.9	231.7	188.7	210.5
REV	REV 28R10™	227.5	211.6	214.1	202.1	213.8
REV	REV 29HR13™	223.3	208.7	227.0	194.7	213.4
Overall Mean		217.0	200.0	227.0	189.7	207.7
LSD(.10)		19.9	23.7	20.4	17.3	
Error degrees of freedom		228	228	228	228	
CV(%)		7.9	10.1	7.7	7.8	
R^2(%)		57.8	41.3	42.6	44.5	

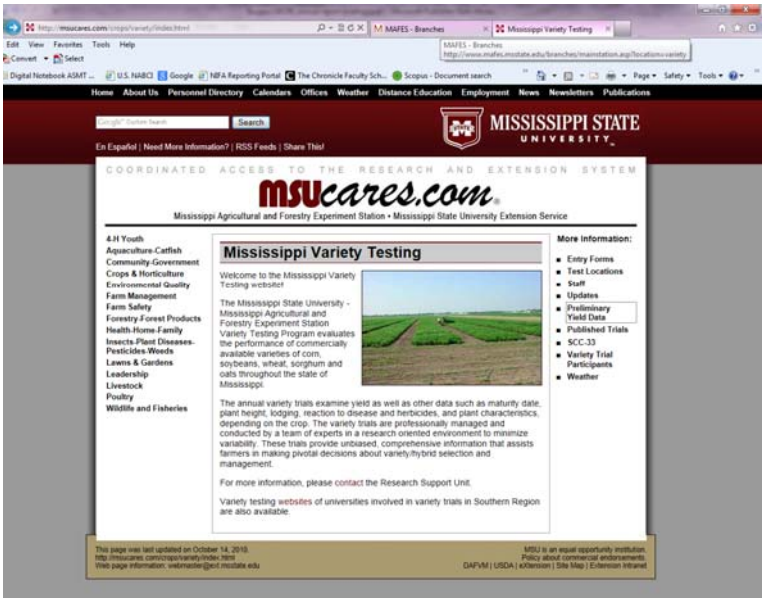
Project Impacts/Benefits

There has been a proliferation of corn hybrids, both conventional and genetically modified, in recent years, and many good hybrids are available to Mississippi producers.

The number of hybrids entered for testing has increased from approximately 60 hybrids at five locations ten years ago to almost 80 hybrids tested in nine tests at eight locations during the 2012 growing season. No single hybrid is normally superior to all others, but hybrid testing usually reveals which hybrids perform better than many in specific situations. Producers can select better hybrids and position them in cultures where they will be more productive, if they have information showing hybrid performance in different environments, soil types and cropping systems. Hybrid performance may vary considerably depending upon hybrid characteristics, including maturity, stalk strength, disease resistance, heat tolerance, etc..., as they dictate plant growth and yield depending upon the environment. In most cases, planting the well-adapted hybrids will make a substantial difference in yield and profitability on a farm. Therefore, thorough testing of many corn hybrids across several soil types, environments and management practices are a requirement to aid the producer in the hybrid selection process.

Project Deliverables

The publication is made available in both hard copy (Mississippi Corn for Grain Hybrid Trials) and may be downloaded from the MSU Variety testing website at www.msucares.com. In the future we will continue to strive to do the absolute best we can to generate useful and unbiased data for Mississippi corn growers and seed industry participants. Our goal is to earn each dollar entrusted to this program by the Mississippi Corn Promotion Board.



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