Mississippi Corn Promotion Board
2015 Progress Report

Project Title: Standardization of Mississippi Corn Hybrid Trials

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Department: Research Support

Project Summary (Issue/Response)

The 2015 Mississippi Corn for Grain Hybrid trials consisted of a total of 80 entries. These hybrids were supplied by sixteen participating companies or groups. These hybrids were grown in both irrigated and non-irrigated environments at multiple locations throughout the state. Each participating company was given the opportunity to submit their hybrid in either the irrigated test, non-irrigated test or both. During the 2015 season, the irrigated tests consisted of 76 of the 80 total hybrids. While the non-irrigated locations were made up of 63 hybrids from the total 80 entered in the Mississippi State Corn Hybrid OVT.

The 2015 growing season started off wet and planting was delayed at some locations due to these wet conditions. Conditions at the time of planting were ideal, but following planting some locations experienced heavy rainfall and cooler temperatures in the weeks following planting. The heavy rainfall resulted in temporary flooding soil saturation to the point that the Raymond location had to be abandoned, due to poor plant stands, causing substantial variability within the tests. The trial at Hernando also was not published due to extensive damage observed from wildlife feeding. The 2015 growing season was favorable for corn production, at most locations. Harvest was completed without any delays due to weather or equipment and good yields were observed in 2015.

Project Results/Outcomes

The 2015 Corn for Grain Hybrid Trials were divided into irrigated and a non-irrigated tests. The irrigated corn locations consisted of 76 corn hybrid entries that were evaluated for their yield potential within five different environments throughout the state. The mean yields for these five locations ranged between 157.4 to 251.0 bushels per acre. The mean yield across all five locations for the irrigated trials was 217.1 bushels per acre. The irrigated corn hybrid trials have traditionally all been located in the delta region of the state; however, one of the irrigated locations was positioned in the Black Belt region of the state, near Macon, MS.

The non-irrigated locations consisted of 63 corn hybrid entries that were evaluated for their yield potential within four different environments throughout the Hill section of the state; however, yields were only reported from two of the four locations due to poor plant stands as a result of flooded conditions, following planting and stand variability due to wildlife feeding. The mean yields for the two non-irrigated locations ranged between 163.8 to 198.1 bushels per acre. The mean yield for both of these non-irrigated locations was 199.1 bushels per acre.

Project Impacts/Benefits

The overall goal of this project was to evaluate multiple corn hybrids across multiple environments, both irrigated and non-irrigated to determine which ones have the greatest yield potential within the state of Mississippi. The benefit of these hybrid trials is to allow the producer to be able to view unbiased yield data of these various corn hybrids, supplied by multiple seed company participants. The results of these yield trials can have a tremendous impact on a producer's decision of which hybrids are best suited for his area of the state or particular soil type. By having tests grown under both irrigated and non-irrigated conditions, this data can help one to make management decisions about which hybrids might have the best potential to perform well when soil moisture is limited.

Pictures

Project Deliverables

The Corn Hybrid for Grain publication is available annually in a printed copy or it may be downloaded from the MSU Variety testing website at **mafes.msstate.edu/variety-trials**.

2015 corn hybrid yield summary for dryland locations.				
Brand	**Hybrid number[1]**	**Aberdeen**	**Brooksville**	**Overall average**
		bu/A	*bu/A*	*bu/A*
AgriGold	A6501VT2RIB	193.3	157.7	175.5
AgriGold	A6719VT2PRO	203.7	170.6	187.1
AgriGold	A6499VT2RIB	204.7	164.7	184.7
AgriGold	A6559VT2RIB	196.5	173.7	185.1
AgriGold	A6573VT2RIB	192.3	154.8	173.5
AgriGold	A6574VT2PRO	189.5	163.4	176.4
AgriGold	A6579STX	195.7	178.6	187.2
AgriGold	A6659VT2RIB	225.3	172.4	198.9
AgriGold	A6687VT2PRO	181.5	147.9	164.7
AgriGold	A6711VT2PRO	205.8	158.0	181.9
AgVenture	Av016y	195.5	168.9	182.2
AgVenture	Av032y	202.2	141.2	171.7
AgVenture	Av376y	203.1	155.8	179.4
Armor	A1414PRO2DG	201.7	166.4	184.1
Armor	A0808PRO2RIB	185.0	140.6	162.8
Armor	A1033PRO2	200.4	157.4	178.9
Armor	A1616PRO2	192.1	147.9	170.0
Armor	A1621PRO2	209.0	167.2	188.1
Armor	*AXC4119PRO2*	201.2	186.2	193.7
Armor	*AXC5117PRO2*	191.4	166.5	179.0
Armor	*AXC5112SS*	189.8	148.8	169.3
Croplan	6640	213.6	202.0	207.8
Croplan	8512	193.6	158.2	175.9
Dekalb	DKC66-97	211.4	195.4	203.4
Dekalb	DKC62-08	191.9	165.4	178.7
Dekalb	DKC64-69	194.0	163.0	178.5
Dekalb	DKC65-71	209.8	169.4	189.6
Dekalb	DKC66-40	206.0	192.0	199.0
Dekalb	DKC66-59	203.0	158.1	180.5
Dekalb	DKC66-87	215.6	189.2	202.4
Dekalb	DKC67-14	229.7	170.9	200.3
Dekalb	DKC67-72	205.6	170.6	188.1
Dekalb	DKC68-26	195.1	185.0	190.0
Delta Grow	2888	192.8	164.7	178.8
Delta Grow	3660	213.9	167.7	190.8
Dyna-Gro	*CX15118*	200.5	163.7	182.1
Dyna-Gro	D54DC94	200.9	164.8	182.8
Dyna-Gro	D55VP77	192.4	170.0	181.2
Dyna-Gro	D57DC58	185.6	136.8	161.2
Dyna-Gro	D57VP51	215.4	161.0	188.2
Dyna-Gro	D57VP75	187.9	186.4	187.1
Mycogen	2C786	188.5	177.3	182.9
Mycogen	2C797	201.8	169.2	185.5
Mycogen	2D848	190.4	176.3	183.3
Mycogen	2Y744	193.2	147.8	170.5
Mycogen	*X13726VH*	198.0	161.7	179.9
Mycogen	*X13813VH*	187.0	161.8	174.4
NK	N76A	198.6	170.7	184.6
NK	N78S	192.7	152.6	172.6
Progeny Ag	*EXP16VT2P*	211.4	159.0	185.2
Progeny Ag	PGY4117 VT2P	177.6	147.2	162.4
Progeny Ag	PGY4115 VT2P	194.3	157.7	176.0
Progeny Ag	PGY5115 VT2P	204.0	165.8	184.9

Steyer	11407VT2PRO RIBC	191.1	160.0	175.5
Steyer	11504GENSS RIBC	191.7	175.1	183.4
Steyer	11604VT2PRO RIBC	210.1	167.8	189.0
Steyer	11702 3000GT	199.0	140.4	169.7
Terral Seed	REV 25BHR26	172.5	158.4	165.4
Terral Seed	REV 22BHR43	171.9	145.1	158.5
Terral Seed	REV 23BHR55	199.4	164.6	182.0
Terral Seed	REV 24BHR93	198.4	149.3	173.8
Terral Seed	REV 26BHR50	188.1	134.3	161.2
Terral Seed	REV 28HR20	200.8	155.9	178.3
Mean		198.1	163.8	181.0
LSD		15.6	16.1	
Error df		186	186	
CV		6.8	8.4	
R^2		48.7	60.5	

[1]Hybrid in italics denotes an experimental entry.

2015 corn hybrid yield summary for irrigated locations.

Brand	Hybrid number[1]	Macon	Minter City	Rolling Fork	Stoneville (clay)	Stoneville (loam)	Overall average
		bu/A	*bu/A*	*bu/A*	*bu/A*	*bu/A*	*bu/A*
AgriGold	A6499 VT2RIB	228.5	204.1	228.9	159.2	247.7	213.7
AgriGold	A6501VT2RIB	244.5	212.9	230.5	160.5	254.6	220.6
AgriGold	A6559VT2RIB	244.8	199.3	225.0	144.8	244.2	211.6
AgriGold	A6573VT2RIB	217.8	190.8	201.2	177.5	235.4	204.6
AgriGold	A6574VT2PRO	243.6	217.0	244.8	149.7	264.2	223.8
AgriGold	A6579STX	232.0	211.5	220.6	175.0	256.6	219.2
AgriGold	A6659VT2RIB	252.3	228.8	249.4	172.8	264.2	233.5
AgriGold	A6687VT2PRO	227.6	222.0	226.3	171.5	263.1	222.1
AgriGold	A6711VT2PRO	232.7	200.5	221.8	182.6	244.5	216.4
AgriGold	A6719 VT2PRO	235.2	212.2	237.1	165.6	249.8	220.0
AgVenture	Av016y	256.9	219.0	258.3	178.4	281.1	238.7
AgVenture	Av032y	246.8	202.2	245.6	147.4	270.1	222.4
AgVenture	Av120y	259.4	235.1	255.0	164.2	277.8	238.3
AgVenture	Av336y	269.2	244.8	256.6	174.7	264.6	242.0
AgVenture	Av376y	252.2	222.3	233.5	160.9	272.0	228.2
Armor	A1414PRO2DG	234.7	236.5	239.1	155.6	262.4	225.7
Armor	A0808PRO2RIB	203.5	197.8	210.3	163.1	228.9	200.7
Armor	A1033PRO2	224.9	184.4	192.9	149.4	224.1	195.1
Armor	A1616PRO2	227.7	195.5	210.6	145.9	232.2	202.4
Armor	A1621PRO2	221.2	207.6	230.0	163.0	242.7	212.9
Armor	*AXC4119 PRO2*	220.2	211.9	220.9	180.7	241.7	215.1
Armor	*AXC5112 SS*	204.9	199.5	195.6	172.6	229.4	200.4
Armor	*AXC5117PRO2*	238.3	219.5	248.6	157.8	266.2	226.1
Augusta	7767	242.9	215.7	220.2	173.8	245.4	219.6
Augusta	7768	273.0	248.9	251.3	189.1	283.6	249.2
Augusta	8868	236.0	233.7	252.9	159.5	262.3	228.9
Augusta	7068	237.3	221.4	243.2	179.2	243.6	224.9
B-H Genetics	BH 8688DG2P	229.9	233.3	239.2	156.0	272.7	226.2
B-H Genetics	BH 8735VTTP	232.5	220.1	244.2	169.0	266.5	226.5
Croplan	6640VT3PRO/RIB	259.9	208.9	227.7	157.5	254.8	221.8
Croplan	7927 VT3PRO/RIB	238.8	231.0	236.4	150.0	265.8	224.4
Dekalb	DKC66-97	233.4	219.1	208.9	151.5	251.6	212.9
Dekalb	DKC62-08	233.1	217.2	224.8	135.5	249.8	212.1
Dekalb	DKC64-69	233.6	211.8	225.7	155.5	249.4	215.2
Dekalb	DKC65-71	223.7	206.8	202.6	125.8	247.0	201.2
Dekalb	DKC66-40	246.0	219.7	234.4	139.8	258.7	219.7
Dekalb	DKC66-59	237.0	215.6	226.1	136.4	248.7	212.7
Dekalb	DKC66-87	250.0	228.0	234.0	158.2	272.8	228.6
Dekalb	DKC67-14	249.7	218.6	240.1	149.8	261.6	224.0
Dekalb	DKC67-72	248.8	202.4	203.5	159.6	236.2	210.1
Dekalb	DKC68-26	262.0	236.0	236.8	132.7	246.0	222.7
Delta Grow	2888	223.0	221.7	200.5	155.2	226.1	205.3
Delta Grow	3660	219.1	196.5	210.8	159.7	238.9	205.0
Dyna-Gro	*CX15118*	234.4	211.4	237.7	166.0	257.2	221.3
Dyna-Gro	D54DC94	219.7	233.7	255.4	141.7	275.3	225.1
Dyna-Gro	D55QC73	233.2	217.4	231.3	140.9	254.5	215.4
Dyna-Gro	D55VP77	218.1	192.3	229.8	161.9	254.0	211.2
Dyna-Gro	D57DC58	225.6	204.4	206.0	159.7	229.7	205.1
Dyna-Gro	D57VP51	259.6	232.9	243.2	179.8	254.7	234.0
Dyna-Gro	D57VP75	243.3	238.3	252.1	165.0	278.0	235.4
Golden Acres	26V21	214.1	219.4	227.4	150.6	243.9	211.1
Golden Acres	G6611	242.6	206.3	210.8	152.0	249.4	212.2
Great Heart Seed	HT-7381VT2PRIB	224.3	219.0	232.4	155.4	258.2	217.9
Great Heart Seed	HT-7741VT2PRIB	240.1	206.3	234.5	170.2	256.8	221.6
Great Heart Seed	HT-7778VT3PRIB	210.2	224.3	224.1	159.8	237.5	211.2
Mycogen	2C797	234.5	209.5	215.2	174.0	227.0	212.1
Mycogen	2D848	243.7	228.5	239.1	162.4	259.7	226.7
Mycogen	2Y744	204.2	170.8	184.8	155.9	187.4	180.6
Mycogen	*X13726VH*	236.1	207.7	240.5	163.6	258.3	221.3
Mycogen	*X13813VH*	221.5	206.5	224.5	124.8	241.7	203.8
NK	N83D	232.6	201.7	216.6	146.0	237.5	206.9
NK	N78S	236.2	207.9	223.8	159.6	259.1	217.3
Progeny Ag	*EXP16VT2P*	220.5	205.7	200.4	163.4	231.1	204.2
Progeny Ag	PGY4117 VT2P	215.3	200.4	216.1	147.9	236.1	203.2
Progeny Ag	PGY4115VT2P	241.4	230.5	226.0	173.5	247.0	223.7
Progeny Ag	PGY5115VT2P	214.5	201.3	214.8	153.1	234.3	203.6
Steyer	11407VT2PRORIBC	211.9	206.2	228.0	145.0	242.7	206.8
Steyer	11504GENSSRIBC	223.1	199.9	214.1	144.9	234.9	203.4
Steyer	11604VT2PRORIBC	229.7	220.1	223.9	145.6	243.3	212.5
Steyer	11702 3000GT	225.4	203.7	224.7	146.9	233.6	206.8
Terral Seed	REV 22BHR43	221.7	201.0	205.1	146.8	223.4	199.6
Terral Seed	REV 23BHR55	242.5	234.0	244.3	147.3	272.7	228.2
Terral Seed	REV 24BHR93	224.1	215.3	225.1	148.1	236.4	209.8
Terral Seed	REV 25BHR26	238.2	234.2	245.0	143.4	278.5	227.9
Terral Seed	REV 26BHR50	241.0	245.0	239.1	150.9	269.8	229.2
Terral Seed	REV 28HR20	235.1	224.7	262.0	150.8	269.4	228.4
Mean		234.0	215.0	228.2	157.4	251.0	217.1
LSD		20.7	15.7	16.3	19	14.9	
Error df		225	225	225	225	225	
CV		7.6	6.3	6.1	10.3	5.0	
R^2		49.3	62.6	66.7	68.5	71.3	

[1]Hybrid in italics denotes an experimental entry.