



Mississippi Corn Promotion Board 2018 Progress Report

Project

Title: Standardization of Mississippi Corn Hybrid Trials

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Department: Research Support

Project Summary (Issue/Response)



The 2018 Mississippi Corn for Grain Hybrid trials consisted of a total of 76 entries. These hybrids were supplied by fourteen 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 2018 season, the irrigated tests consisted of 72 of the 76 total hybrids. While the non-irrigated locations were made up of 64 hybrids from the total 76 entered in the Mississippi State Corn for Grain Hybrid OVT.

The 2018 growing season started off wet and planting was delayed at some locations due to these wet conditions. One location, Minter City, was lost due to a prolonged rainy period during the desired planting window. Conditions at the time of planting were ideal, but following planting some locations experienced tough environmental conditions, primarily drought, in the weeks following planting. The Raymond location had to be abandoned due to a significant reduction plant stands, from animal feeding, which caused substantial variability within the tests. After discussion with the Extension Corn Specialist, the decision was made to discard the results of this location after harvest was completed and plant stands were assessed to determine if the data was viable. Overall the 2018 growing season was favorable for corn production, at most locations. Harvest was completed without any delays due to weather or equipment and on average, good yields were observed in 2018.



Project Results/Outcomes

The 2018 Corn for Grain Hybrid Trials were divided into irrigated and a non-irrigated tests. The irrigated corn locations consisted of 72 corn hybrid entries that were evaluated for their yield potential within four different environments throughout the state. The mean yields for these four locations ranged between 218.4 to 236.8 bushels per acre. The mean yield across all four locations for the irrigated trials was 226.9 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 64 corn hybrid entries that were evaluated for their yield potential within five different environments throughout the Hill section of the state; however, yields were only reported from four of the five locations due to poor plant stands, which caused variability due to wildlife feeding. The mean yields for the four non-irrigated locations ranged between 165.7 to 234.9 bushels per acre. The mean yield across all four of these non-irrigated locations was 200.5 bushels per acre.

Project Results

See attached Tables

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.

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.

2018 Corn hybrid yield summary for irrigated locations.

| Brand | Hybrid¹ | Macon hills (clay) | Rolling Fork delta (loam) | Stoneville delta (clay) | Stoneville delta (loam) | Overall avg. |
|------------------|---------------------------|-----------------------------------|--|--|--|-------------------------|
| | | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> |
| AgriGold | A645-10VT2RIB | 227.8 | 212.9 | 226.8 | 205.5 | 218.2 |
| AgriGold | A646-12STX | 221.6 | 224.9 | 240.4 | 204.1 | 222.8 |
| AgriGold | A647-90VT2RIB | 237.4 | 209.0 | 235.4 | 209.8 | 222.9 |
| AgriGold | A6544VT2RIB | 249.9 | 227.2 | 224.2 | 217.9 | 229.8 |
| AgriGold | A6659VT2RIB | 254.9 | 236.1 | 241.6 | 237.8 | 242.6 |
| AgriGold | A6572VT2RIB | 246.9 | 232.3 | 234.2 | 243.2 | 239.1 |
| AgriGold | A6711VT2PRO | 242.2 | 224.0 | 249.9 | 222.8 | 234.7 |
| Armor | 1447 | 227.5 | 221.4 | 247.8 | 211.2 | 227.0 |
| Armor | 1667 | 228.7 | 195.8 | 227.4 | 249.4 | 225.3 |
| Armor | 1887 | 227.5 | 208.8 | 229.8 | 226.7 | 223.2 |
| Armor | X8117 * | 210.5 | 220.7 | 227.5 | 223.2 | 220.5 |
| Armor | X8118 * | 210.1 | 227.1 | 235.5 | 221.6 | 223.6 |
| Augusta | A5065 | 212.5 | 223.6 | 223.3 | 229.3 | 222.2 |
| Augusta | A7768 | 229.9 | 218.3 | 258.7 | 243.7 | 237.6 |
| Augusta | A8868 | 218.8 | 209.7 | 251.5 | 204.9 | 221.2 |
| Augusta | A1165 * | 243.1 | 231.4 | 235.2 | 206.5 | 229.1 |
| Augusta | A1367 | 220.7 | 240.2 | 248.1 | 234.9 | 236.0 |
| Augusta | A4463 * | 220.6 | 225.3 | 233.1 | 195.8 | 218.7 |
| Augusta | A4465 * | 211.2 | 199.9 | 200.5 | 205.1 | 204.2 |
| Augusta | A5464 * | 204.5 | 190.6 | 239.5 | 222.6 | 214.3 |
| Croplan | 5678 | 240.8 | 229.5 | 236.8 | 203.6 | 227.7 |
| DeKalb | DKC62-08 | 231.0 | 222.4 | 235.9 | 223.1 | 228.1 |
| DeKalb | DKC64-35 | 247.6 | 217.8 | 242.1 | 221.7 | 232.3 |
| DeKalb | DKC65-95 | 244.4 | 226.7 | 266.3 | 228.1 | 241.4 |
| DeKalb | DKC66-75 | 238.7 | 230.0 | 255.6 | 209.0 | 233.3 |
| DeKalb | DKC67-44 | 234.5 | 235.6 | 238.7 | 247.0 | 239.0 |
| DeKalb | DKC68-26 | 232.6 | 234.7 | 210.9 | 208.2 | 221.6 |
| DeKalb | DKC68-69 | 232.5 | 223.7 | 253.6 | 200.1 | 227.5 |
| DeKalb | DKC69-16 | 220.0 | 221.1 | 247.7 | 212.8 | 225.4 |
| DeKalb | DKC70-27 | 247.3 | 226.8 | 250.4 | 240.9 | 241.3 |
| Dyna Gro | CX17117 * | 233.0 | 222.2 | 254.3 | 235.1 | 236.1 |
| Dyna Gro | D54VC14 | 232.8 | 206.5 | 241.3 | 199.5 | 220.0 |
| Dyna Gro | D57VC51 | 244.8 | 226.7 | 215.3 | 208.0 | 223.7 |
| Dyna-Gro | D55VC45 | 230.7 | 211.0 | 249.2 | 225.9 | 229.2 |
| Dyna-Gro | D58VC65 | 246.2 | 228.0 | 233.8 | 191.0 | 224.7 |
| Great Heart Seed | HT-7244VT2P | 215.1 | 201.0 | 228.0 | 190.1 | 208.5 |
| Great Heart Seed | HT-7302VT2P | 225.7 | 205.8 | 226.6 | 210.2 | 217.1 |
| Great Heart Seed | HT-7381VT2P | 235.1 | 191.9 | 234.1 | 221.7 | 220.7 |
| Great Heart Seed | HT-7425DGV2P | 237.2 | 228.0 | 268.3 | 228.2 | 240.4 |
| Great Heart Seed | HT-7486SS | 222.4 | 194.6 | 240.1 | 201.8 | 214.7 |
| Great Heart Seed | HT-7676VT2P | 229.9 | 226.1 | 223.9 | 202.0 | 220.5 |
| Local Seed | AV8614VYHR | 248.4 | 236.9 | 264.5 | 278.0 | 257.0 |

| Brand | Hybrid ¹ | Macon hills (clay) | Rolling Fork delta (loam) | Stoneville delta (clay) | Stoneville delta (loam) | Overall avg. |
|----------------|---------------------|--------------------------|---------------------------------|-------------------------------|-------------------------------|-----------------|
| Local Seed | LC0877VT2P | 224.6 | 197.9 | 220.0 | 221.3 | 216.0 |
| Local Seed | LC1577VT2P | 207.4 | 182.9 | 236.7 | 223.4 | 212.6 |
| Local Seed | LC1776VT2P | 216.4 | 227.7 | 227.0 | 226.9 | 224.5 |
| Local Seed | LC1878VT2P | 215.9 | 210.4 | 245.3 | 226.8 | 224.6 |
| Local Seed | LC1987VT2P | 216.4 | 204.0 | 207.0 | 211.2 | 209.7 |
| Local Seed | LS1586TC | 230.8 | 231.9 | 239.6 | 223.4 | 231.4 |
| Local Seed | RL8430VYHR | 221.7 | 236.2 | 242.0 | 247.5 | 236.8 |
| Mission Seeds | A1857SS | 241.8 | 204.9 | 251.4 | 244.9 | 235.7 |
| Mission Seeds | MEX 1308VT2P * | 195.7 | 182.7 | 220.4 | 168.6 | 191.8 |
| Mission Seeds | MEX 1508DGV2P * | 253.4 | 183.4 | 277.4 | 235.9 | 237.5 |
| MorCorn | MC 4457 | 203.1 | 211.3 | 232.7 | 191.5 | 209.7 |
| MorCorn | MC4319 | 232.2 | 214.7 | 204.3 | 205.5 | 214.2 |
| MorCorn | MC4725 | 256.6 | 237.2 | 181.3 | 204.3 | 219.8 |
| NK Seeds | NK1573-3110 | 225.0 | 202.9 | 234.0 | 200.9 | 215.7 |
| NK Seeds | NK1584-3000GT | 222.2 | 207.2 | 252.6 | 216.1 | 224.5 |
| Pioneer | P2089VYHR | 221.0 | 229.5 | 242.8 | 241.2 | 233.6 |
| Progeny Ag | PGY 8116SS | 233.2 | 223.9 | 245.2 | 228.3 | 232.6 |
| Progeny Ag | PGY EXP1814 * | 218.8 | 205.8 | 234.9 | 226.1 | 221.4 |
| Progeny Ag | PGY EXP1817 * | 260.1 | 248.7 | 213.1 | 216.2 | 234.5 |
| Progeny Ag | PGY 6119VT2P | 237.5 | 225.6 | 232.7 | 249.0 | 236.2 |
| Progeny Ag. | PGY 6116VT2P | 236.1 | 225.4 | 230.4 | 215.7 | 226.9 |
| Progeny Ag. | PGY 5115VT2P | 222.3 | 170.3 | 245.5 | 236.6 | 218.7 |
| Terral Seed | REV 23BHR55 | 234.4 | 241.3 | 246.5 | 243.9 | 241.5 |
| Terral Seed | REV 24BHR99 * | 230.8 | 224.7 | 247.2 | 254.4 | 239.3 |
| Terral Seed | REV 25BHR26 | 225.7 | 234.4 | 258.9 | 245.8 | 241.2 |
| Terral Seed | REV 25BHR89 * | 225.1 | 228.0 | 215.5 | 221.7 | 222.6 |
| Terral Seed | REV 25R27 | 217.1 | 212.0 | 216.0 | 226.2 | 217.8 |
| Terral Seed | REV 27BHR79 * | 238.7 | 243.1 | 252.4 | 257.4 | 247.9 |
| Terral Seed | REV 28BHR18 | 230.5 | 242.6 | 248.5 | 264.7 | 246.5 |
| Terral Seed | REV 2616PWE | 230.1 | 204.5 | 221.4 | 247.3 | 225.8 |
| Mean | | 229.7 | 218.4 | 236.8 | 222.6 | 226.9 |
| CV | | 7.4 | 9.5 | 8.0 | 9.4 | |
| LSD(0.05) | | 23.7 | 28.8 | 30.4 | 33.7 | |
| R ² | | 51.3 | 48.0 | 55.1 | 58.3 | |
| Error DF | | 213 | 213 | 142 | 142 | |

¹Hybrid followed by an asterisk indicates an experimental entry.

2018 Corn hybrid yield summary for non-irrigated locations.

| Brand | Hybrid ¹ | Aberdeen | Brooksville | Olive Branch | Rolling Fork | Overall avg. |
|------------|---------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | hills (clay) | hills (clay) | hills (loam) | delta (loam) | |
| | | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> | <i>bu/A</i> |
| AgriGold | A645-10VT2RIB | 173.7 | 179.3 | 236.5 | 204.5 | 198.5 |
| AgriGold | A647-90VT2RIB | 154.3 | 195.8 | 234.8 | 214.7 | 199.9 |
| AgriGold | A6544VT2RIB | 177.7 | 165.3 | 239.7 | 241.5 | 206.1 |
| AgriGold | A6659VT2RIB | 161.9 | 181.8 | 258.5 | 235.2 | 209.3 |
| AgriGold | A6572VT2RIB | 183.0 | 198.0 | 271.2 | 203.1 | 213.8 |
| AgriGold | A6711VT2PRO | 186.8 | 195.3 | 281.5 | 208.7 | 218.0 |
| Armor | 1447 | 116.1 | 173.3 | 242.7 | 223.6 | 188.9 |
| Armor | 1667 | 188.3 | 184.8 | 238.6 | 212.7 | 206.1 |
| Armor | 1887 | 151.7 | 174.5 | 228.6 | 196.4 | 187.8 |
| Armor | X8117 * | 149.4 | 182.0 | 234.8 | 207.6 | 193.4 |
| Armor | X8118 * | 162.6 | 179.8 | 226.1 | 214.3 | 195.7 |
| Augusta | A5065 | 175.5 | 157.0 | 213.2 | 221.1 | 191.7 |
| Augusta | A8868 | 167.7 | 171.8 | 203.0 | 219.9 | 190.6 |
| Augusta | A1165 * | 159.9 | 186.3 | 235.1 | 203.0 | 196.1 |
| Augusta | A1367 * | 170.0 | 177.5 | 230.6 | 255.0 | 208.3 |
| Augusta | A4463 * | 175.7 | 161.3 | 239.4 | 238.6 | 203.7 |
| Augusta | A4465 * | 165.5 | 168.5 | 224.2 | 217.5 | 193.9 |
| Augusta | A5464 * | 158.3 | 176.3 | 223.3 | 195.0 | 188.2 |
| Croplan | 5678 | 165.6 | 183.8 | 290.3 | 229.6 | 217.3 |
| DeKalb | DKC62-08 | 104.6 | 201.3 | 248.2 | 225.2 | 194.8 |
| DeKalb | DKC64-35 | 182.8 | 184.5 | 260.4 | 227.0 | 213.7 |
| DeKalb | DKC65-95 | 153.7 | 198.8 | 236.4 | 230.4 | 204.8 |
| DeKalb | DKC66-75 | 190.9 | 180.3 | 259.6 | 241.5 | 218.1 |
| DeKalb | DKC67-44 | 188.0 | 199.8 | 255.2 | 235.4 | 219.6 |
| DeKalb | DKC68-26 | 158.3 | 199.8 | 225.6 | 236.6 | 205.1 |
| DeKalb | DKC68-69 | 174.1 | 189.8 | 255.4 | 226.0 | 211.3 |
| DeKalb | DKC69-16 | 169.7 | 192.3 | 231.7 | 222.5 | 204.1 |
| DeKalb | DKC70-27 | 182.7 | 201.0 | 235.3 | 239.3 | 214.6 |
| Dyna Gro | CX17117 * | 180.4 | 197.8 | 243.1 | 200.7 | 205.5 |
| Dyna Gro | D54VC14 | 144.0 | 174.0 | 224.0 | 207.3 | 187.3 |
| Dyna Gro | D57VC51 | 178.9 | 175.0 | 236.3 | 225.1 | 203.8 |
| Dyna-Gro | D55VC45 | 177.0 | 181.0 | 225.0 | 207.8 | 197.7 |
| Dyna-Gro | D58VC65 | 171.0 | 195.3 | 260.6 | 212.6 | 209.9 |
| Local Seed | AV8614VYHR | 182.8 | 166.8 | 251.9 | 221.6 | 205.8 |
| Local Seed | LC0877VT2P | 132.4 | 176.5 | 204.8 | 210.3 | 181.0 |
| Local Seed | LC1577VT2P | 138.6 | 170.0 | 223.1 | 184.6 | 179.1 |
| Local Seed | LC1776VT2P | 122.5 | 152.8 | 190.7 | 207.2 | 168.3 |
| Local Seed | LC1878VT2P | 180.0 | 177.5 | 215.1 | 213.1 | 196.4 |
| Local Seed | LC1987VT2P | 151.1 | 177.3 | 207.7 | 199.2 | 183.8 |
| Local Seed | LS1586TC | 105.3 | 184.3 | 235.3 | 238.6 | 190.9 |

| Brand | Hybrid¹ | Aberdeen hills (clay) | Brooksville hills (clay) | Olive Branch hills (loam) | Rolling Fork delta (loam) | Overall avg. |
|----------------|---------------------------|--------------------------------------|---|--|--|-------------------------|
| Local Seed | RL8430VYHR | 152.5 | 175.8 | 201.1 | 222.6 | 188.0 |
| Mission Seeds | A1857SS | 194.5 | 190.5 | 263.9 | 227.7 | 219.2 |
| Mission Seeds | MEX1508DGVT2P * | 159.3 | 203.8 | 259.7 | 251.0 | 218.4 |
| MorCorn | MC 4457 | 158.4 | 182.0 | 230.1 | 206.0 | 194.1 |
| MorCorn | MC4319 | 164.8 | 175.8 | 237.1 | 212.8 | 197.6 |
| MorCorn | MC4725 | 146.2 | 184.5 | 220.7 | 204.5 | 189.0 |
| Pioneer | P0805AM | 156.7 | 164.0 | 221.2 | 208.5 | 187.6 |
| Progeny Ag. | PGY 7118VT2P | 182.3 | 161.5 | 219.9 | 228.3 | 198.0 |
| Progeny Ag. | PGY 8116SS | 206.3 | 203.0 | 262.0 | 233.5 | 226.2 |
| Progeny Ag. | PGY EXP1814 * | 157.3 | 185.5 | 260.0 | 230.3 | 208.3 |
| Progeny Ag. | PGY EXP1817 * | 179.4 | 184.5 | 238.1 | 238.3 | 210.1 |
| Progeny Ag. | PGY 6110VT2P | 155.4 | 137.0 | 185.2 | 186.0 | 165.9 |
| Progeny Ag. | PGY 6119VT2P | 160.2 | 193.5 | 247.1 | 219.3 | 205.0 |
| Progeny Ag. | PGY 7111VT2P | 172.6 | 163.5 | 210.5 | 224.4 | 192.8 |
| Progeny Ag. | PGY 6116VT2P | 164.0 | 175.3 | 250.4 | 218.9 | 202.1 |
| Progeny Ag. | PGY 5115VT2P | 178.9 | 199.8 | 266.3 | 249.7 | 223.6 |
| Terral Seed | REV 23BHR55 | 186.1 | 168.0 | 219.7 | 237.0 | 202.7 |
| Terral Seed | REV 24BHR99 * | 193.7 | 183.5 | 261.5 | 228.9 | 216.9 |
| Terral Seed | REV 25BHR26 | 178.7 | 165.0 | 217.3 | 221.6 | 195.6 |
| Terral Seed | REV 25BHR89 * | 162.0 | 164.0 | 202.6 | 212.8 | 185.3 |
| Terral Seed | REV 25R27 | 170.4 | 170.3 | 189.7 | 213.3 | 185.9 |
| Terral Seed | REV 27BHR79 * | 173.1 | 197.5 | 252.3 | 250.0 | 218.2 |
| Terral Seed | REV 28BHR18 | 185.1 | 179.3 | 234.1 | 244.9 | 210.8 |
| Terral Seed | REV 2616PWE | 164.2 | 158.8 | 207.0 | 235.0 | 191.3 |
| Mean | | 165.9 | 180.2 | 234.9 | 221.2 | 200.6 |
| CV | | 11.5 | 9.2 | 10.3 | 7.3 | |
| LSD(0.05) | | 26.7 | 23.1 | 33.6 | 22.6 | |
| R ² | | 60.0 | 61.2 | 54.1 | 58.5 | |
| Error DF | | 189 | 189 | 189 | 189 | |

¹Hybrid followed by an asterisk indicates an experimental entry.