Results and Discussion

Performance of Wheat Varieties Across South Louisiana

South Region Means

Table 1 shows performance of wheat varieties across south Louisiana in 2011. This area includes locations at Baton Rouge, Jeanerette and Crowley. The LAES breeding line LA01110D-150 had the highest yield (85.2 bu/acre) across south Louisiana. The Georgia breeding line GA 001138-8E36 and the commercial variety AGS2035 also had mean yields above 82 bu/acre. The commercial variety AGS 2060 had the highest test weight (59.5 lbs/bu) but ranked 17th in yield. Low leaf rust pressure resulted in a mean incidence of 4% and a high of 27% shared by three entries. The top seven yielding entries all had a leaf rust rating of 0.

When choosing varieties for planting in south Louisiana heading date is significant. Early heading varieties suffer freeze damage and late varieties may not adequately vernalize and, as a result, not fully head. The highest yielding entry, LA 01110D-136 had a heading date 5 days earlier than the mean of 85. The lowest yielding entry headed 10 days later than the mean.

Across south Louisiana for two years, LA01110D-150 had the highest mean yield (74.4 bu/acre). The released varieties AGS 2035, USG 3120, Baldwin and Jamestown all had yields above 70 bu/acre compared to the mean of 66.6 bu/acre. The variety AGS 2060 had the highest test weight (58.6 lbs/bu) followed by the varieties Pioneer 26R61 and USG 3120 (58.1 lbs/bu). The test weight mean was 56.9 lbs/bu. Averages also included 87 (March 28) for heading day, 4% for stripe rust incidence and 3% for leaf rust incidence.

LA 01110D-150 had the highest south Louisiana three year mean yield (77.2 bu/acre) of 15 entries (Table 3). The varieties Baldwin, AGS 2035, Magnolia and Jamestown all had yields above 72 bu/acre. AGS 2060, ranked twelfth in yield had the highest test weight (58.7 lbs/bu).

Baton Rouge

Favorable planting and winter growing conditions resulted in good stands that tillered well. Dry conditions in April and May led to low disease pressure with high yields and weed quality at harvest. The Georgia breeding line GA 001138-8E36 had the highest yield at this location (Table 4). The entries LA01110D-150, AGS 2035, and Progeny 117 also ranked near the top, all with yields above 90 bu/acre. The test weight mean of 46 entries was 58.8 with 10 entries having a test weight greater than 60 lbs/bu. Lodging, leaf rust incidence and Septoria levels were all low with means of 1.2 (0 = none, 9 = very severe), 2%, and 2.5 (0-9 scale) respectively. The five highest yielding entries all had heading dates from 0 to 4 days prior to the mean of 84 (March 25), thirteen days earlier than 2010.

LA 01110D-150 had the highest two year yield (73.2 bu/acre) for Baton Rouge. Five released varieties Arcadia, AGS 2035, Coker 9552, Magnolia, and Jamestown all had yields above 70 bu/acre compared to the mean of 67 bu/acre.

Crowley

USG had the highest yield (80.7 bu/acre) at Crowley for 2011 (Table 5). GA 001138-8E36, LA 01110D-150, LA 02006E239, Jamestown, and Terral ELA821 all had yields greater than 72 bu/acre. AGS 2056 and Delta Grow 8300 had the highest test weight (57.0 lbs/bu) with yields greater than 67 bu/acre. USG 3120 had the highest two year mean yield (79.4 bu/acre) followed by AGS 2035, Jamestown, and Terral LA 841. Leaf rust pressure was moderate with a mean incidence of 6% and a high of 55%. The top seven yielding entries all had leaf rust ratings of 0. The mean heading day was 80 (March 21), fourteen days prior to 2010.

Jeanerette

LA01110D-150 led 46 entries with a yield of 91.4 bu/acre (Table 6). AGS 2035, GA 001138-8E36, Dyna-Gro, Baldwin and Pioneer 26R61 were also high ranking, all wutg yields above 76 bu/acre, well above the mean of 62.5 bu/acre. AGS 2060 (60.2 lbs/bu) had the highest test weight compared to a mean of 56.3 followed by USG3120 and Pioneer 26R61. The top nineteen yielding entries all had heading dates prior to the mean of 90 (March 31). The lowest yielding entry, Progeny PGX10-2 along with seven others headed out ten or more days later than the mean. Leaf rust pressure was moderate with a mean incidence of 4% and a high of 43%. With the exception of GA001138-8E36 (1%), the top seven yieldin entries had a leaf rust rating of 0.

Performance of Wheat Varieties Across North Louisiana

North Region Means:

Terral TV8861 (81.8 bu/acre) had the highest mean yield across North Louisiana for 2011 (Table 7). USG 3120, Pioneer 26R87, USG 3438, and Jamestown all had yields greater than 79.5 bu/acre, well above the mean of 72.8 bu/acre. AGS 2060 had the highest test weight (61.0 lbs/bu) followed by Pioneer 26R87, Jamestown, and GA 001138-8E36, all with test weights above 60 lbs/bu compared to the mean of 57.6 lbs/bu. Stripe rust data were collected only at the Winnsboro location where pressure was moderate. The stripe rust incidence mean was 5% with a high of 63%. USG 3120 and Pioneer 26R87, the 2nd and third highest yielding entries across North Louisiana had Stripe rust incidence ratings of 4 and 5% respectively. Leaf rust pressure was low across North Louisiana with a incidence mean of 2% and a high of 25%. The top five yielding entries all had leaf rust incidence ratings of 0.

Terral TV8861 (70.3 bu/acre) had the highest two year mean yield across north Louisiana for two years (Table 8). The average yield of 28 entries was 64.1 bu/acre. Jamestown, USG 3120, and LA 01110D-150 had above average yields and test weights. The test weight mean was 57.0 lbs/bu.

USG 3120 had the highest yield (72 bu/acre) across north Louisiana for three years (Table 9). Pioneer 26R87, Jamestown, AGS 2035, and LA01110D-150 all had yields above 70 bu/acre and test weights above 57 lbs/bu. Means included 67.6 bu/acre for yield and 57.2 lbs/bu for test weight.

Alexandria

Ideal planting and growing conditions resulted in excellent stands, good tillering and high yields at Alexandria. Disease pressure was low due to dry conditions and no lodging occurred. GA001138-8E36 had the highest yield (86.9 bu/acre) of 52 entries. The yield mean was 77.5 bu/acre. Terral TV 8861, LA01110D-150, Terral LA841, and Pioneer 26R87 followed, all with yields above 84 bu/acre and test weight above 54 lbs/bu. AGS 2060 had the highest test weight (60.5 lbs/bu). The test weight mean was 55.3 lbs/bu. Leaf rust incidence ranged from 0 to 51% with a mean of 4%. The top five yielding entries all had leaf rust incidence ratings of 3% or less. The heading date ranged from 77 to 94 with a mean of 86 (March 27). The top three yielding varieties spanned the entire heading date ranger. Jamestown had the highest two year mean yield (67.8 bu/acre) followed by Terral LA841, AGS 2052, and USG 3120, all with yields of 66 bu/acre or above. The two year mean yield of twenty eight entries was 62.1 bu/acre.

Bossier City

No data were collected at Bossier City due to residual fertility issues and erratic stands.

St. Joseph

Poor stands in the test planted in early November resulted in a second planting a month later. USG 3438 had the highest yield (87.4 bu/acre) of 52 entries at St. Joseph in 2011 (Table 11). USG 3251, Dixie McAlister, LA 01110D-150, and Jamestown also had yields above 80 bu/acre and test weights above 74.5 lbs/bu. Yields ranged from 87.4 bu/acre to 55.2 with a mean of 70.5 bu/acre. Test weights ranged from 60.8 to 55.3 lbs/bu with a mean of 57.9 lbs/bu. Leaf rust pressure was low with incidence ranging from 0 to 23% and a mean 1%. Forty three of fifty two entries had a leaf rust incidence of 0%. Heading data ranged from day 83 to day 96 with a mean 89 (March 30). The top five yielding entries all had a heading date within 6 days of the mean.

USG had the highest two year mean yield (80.9 bu/acre). LA01110D-150, Jamestown, Pioneer 26R87, and USG 3120 also had two year mean yields above 74 bu/acre.

Winnsboro

Favorable weather at planting and during the winter resulted in good, well tillered stands in Winnsboro. Heavy rains in February and March increased disease pressure. The highest yielding entry at Winnsboro was USG 3120 (81.2 bu/acre) followed by AGS 2035, Delta Grow 7500, and Terral TV8861, all with test weights above 80 bu/acre (Table 12). Means at Winnsboro included 70.4 bu/acre for yield and 59.6 lbs/bu for test weight. Jamestown had the highest test weight (62.5 lbs/bu). Pioneer 26R87,AGS 2060 also had test weights of 62 lbs/bu or greater. Terral TV8861 had the highest two year mean yield (77.6 bu/acre). Leaf rust incidence ranged between 0 and 25% with the mean of 2%. Forty one of fifty two entries had a leaf rust incidence of 0 which included the top five in yield. Stripe rust pressure was a bit higher with a range of 0 to 63% incidence and a mean of 5%. The mean heading data at Winnsboro was 90 (March 31). The five highest yielding entries headed within 5 days of the mean.

Statewide Performance of Wheat Varieties

LA 01110D-150 (82.1 bu/acre) had the highest yield of 46 entries statewide in 2011 despite a stripe rust incidence of 14% (Table 13). AGS 2035, USG 3120, GA001138-8E36, and Jamestown all had yields above 78 bu/acre. Test averages included 71.7 bu/acre for yield and 57.4 lbs/bu for test weight. AGS 2060 had the highest test weight (60.2 lbs/bu). Jamestown, GA001138-8E36, Pioneer 26R61, and USG 3120 all had test weights above 59 lbs/bu. Stripe rust had an incidence mean of 6% with a high of 63%. The leaf rust incidence mean was 3% with the five highest yielding entries having an incidence rating of 0%. A statewide breakdown of yield by location is presented in Table 14.

LA01110D-150 led statewide for two years with a yield of 71.1 bu/acre (Table 15). USG 3120, AGS 2035, and Jamestown also had yields above 69 bu/acre. AGS 2060, Jamestown, Pioneer 26R61, and Syngenta Coker 9553 all had mean test weights above 58 lbs/bu. LA 01110D-150 (73.3 bu/acre) had the highest yield across the state for three years (Table 16). AGS 2035 and Dyna-Gro Baldwin also had yields above 72 bu/acre. AGS 2060 led for three years with a test weight of 59.1 lbs/bu.

OTHER WHEAT TRIALS

This advanced yield trial of LAES breeding lines was planted at BatonRouge, Winnsboro, and locations in Arkansas and Mississippi in 2011. The trial contained 45 entries which included five checks. Test means included 74.5 bu/acre for yield and 58.2 lbs/bu for yield (Table 17). LA04041D-63 (88.9 bu/acre) was the highest yielding entry followed by AGS 2035, Baldwin, LA04026D-7, and LA01110D-150, all with yields above 80 bu/acre. The breeding line LA03217E-9 had the highest test weight (60.8 lbs/bu). AGS 2060 and LA04026D-3 also had test weights greater than 60 lbs/bu. The mean heading date was 90 (March 31) with four of the five top yielding entries heading out within one day of the mean.

Performance of Oat Varieties

Performance of Oat Varieties Across Louisiana:

For two years, statewide, Horizon 201 led ten entries with a yield of 78 bu/acre (Table 18). The breeding line FL0522-FLID-B-S-B-S-92-S1 had a slightly lower yield (77.2 bu/acre) and the highest test weight (33.4lbs/bu). Both entries had a heading date within two days of the mean (April) and stem rust ratings below the mean of 1.5 (0-9 scale).

Horizon 270 had the highest yield (93.2 bu/acre) across Louisiana for three years (Table 19), followed by TX05CS347-1 and Horizon 201 both with yields above 86 bu/acre. LA99016 and TX05CS347-1 led eight entries, both with a test weight of 31.6 lbs/bu. The yield mean was 82.2 bu/acre and the test weight mean, 30.5 lbs/bu. With the exception of Brooks, all entries had a three mean crown rust incidence of 0%.

Baton Rouge:

Eighteen entries were tested in Baton Rouge in 2011 (Table 20). LA03063SBSBSB-S4 was the highest yielding entry with a yield of 121.9 bu/acre, well above the mean of 94.3 bu/acre. FL0522-FLID-B-S-B-S-92-S1, Horizon 270, and TX07CS3697 followed, all with yields above 108 bu/acre. Means included 94.3 bu/acre for yield, 32.6 lbs/bu for test weight and 90 (March 31) for heading date, eleven days earlier than 2010. There was significant winter stress at this location. Stress ratings ranged from 2.0 to 7.0 with a mean of 3.2 (0-9 scale). The top three yielding entries had stress ratings below the mean.

Winnsboro:

The oat variety trial at Winnsboro was lost as a result of herbicide damage.