Results and Discussion

Performance of Wheat Varieties Across North Louisiana

North Region Means:

In 2012, the variety Pioneer 26R41 (71.6 bu/acre) had the highest mean yield of 69 entries across North Louisiana, which included St. Joseph and Winnsboro (Table 1). The varieties Pioneer 26R87 and USG 3120, as well as the experimental lines LA04041D-85 and ARX1133 had yields greater above 68.8 bu/acre, compared to the mean of 59.0 bu/acre. Jamestown (59.6 lbs/bu) led in test weight followed by Pioneer 26R87 (59.3 lbs/bu) and AGS 2060 (58.9 lbs/bu) compared to the mean of 55.7 lbs/bu. Stripe rust data were collected only at the Winnsboro location. Leaf rust pressure was high with an incidence mean of 13% and a high of 76%. The top four yielding entries all had leaf rust ratings of 0%. Leaf blotch, necrosis caused by a combination of bacterial streak and septoria exacerbated by frost damage and physical damage during severe rain storms, was significant. Ratings ranged from 1.0 to 6.5 (1 to 9 scale) with a mean of 2.3.

USG 3120 (76.7 bu/acre) led in two year mean yield across north Louisiana (Table 2). 2011 data includes Alexandria, St. Joseph and Winnsboro while only St. Joseph and Winnsboro are represented for 2012. Pioneer 26R87, Jamestown and Progeny 870 also had yields above 73 bu/acre. The average yield of 38 entries was 64.1 bu/acre., USG 3120, Pioneer 26R87, and Jamestown all had test weights above 59 lbs/bu compared to the mean 57.1 lbs/bu and leaf rust ratings of 0.

Of 23 entries, USG 3120 had the highest yield (69.1 bu/acre) across north Louisiana for three years (Table 3). Jamestown, Pioneer 26R87, Terral TV8861 and LA01110D-150 also had yields at or above 67 bu/acre compared to the mean of 63.8 bu/acre. USG 3120, Jamestown and Pioneer 26R87 had test weights above 58 lbs/bu compared to the mean of 57.1 lbs/bu and leaf rust ratings of 0.

Alexandria

Data collected at Alexandria were not published due to delayed harvest and high variability.

Bossier City

No data were collected at Bossier City due to lodging and incomplete vernalization.

St. Joseph

Overall, the 2012 trials at St. Joseph were good and useable data were obtained. At this location, the experimental line Pioneer 26R53 (64.4 bu/acre) had the highest yield of 69 entries (Table 4). The other top five yielding entries included two additional experimental lines,

EXP32110 (63.8 bu/acre) and ARX1133 (62.7 bu/acre) and the varieties Pioneer 26R87 (62.6 bu/acre) and Dyna-Gro Baldwin (61.8 bu/acre). The test weight mean was 51.3 bu/acre. Pioneer 26R87 (59.5 lbs/bu) had the highest test weight followed by Jamestown (59.1 lbs/bu), Pioneer 26R61 (58.7 lbs/bu) and Terral TV8626 (58.4 lbs/bu). The yield mean was 51.3 bu/acre with a range of between 87.4 bu/acre and 36.3 bu/acre. Test weights ranged from 60.8 to 55.3 lbs/bu with a mean of 55.7 lbs/bu. Leaf rust pressure was moderate with incidence ranging from 0 to 83% and a mean of 5%. Four of the five top yielding entries had a leaf rust incidence of 0%. Heading dates ranged from day 73 to day 94. The top three yielding entries had heading dates within 9 days of the mean of 83 (March 24).

Of thirty eight entries, Pioneer 26R87 had the highest two year mean yield (70.3 bu/acre). USG 3120, Jamestown, Dixie Kelsey and Delta Grow 7500 also had two year mean yields above 67 bu/acre at the St Joseph location.

Winnsboro

The variety Pioneer 26R41 (82.3 bu/acre) had the highest yield of 69 entries in 2012 followed by AGS 2056 (78.5 bu/acre), USG 3120 (77.8 bu/acre), Progeny 125 (77.6 bu/acre) and Pioneer 26R87 (76.9 bu/acre) all well above the mean of 66.8 bu/acre (Table 5). Jamestown (60.0 lbs/bu) led in test weight followed by USG 3120, AGS 2060, USG 3201 and Delta Grow 7900, all with test weights above 59 lbs/bu. The test weight mean was 55.8 lbs/bu. Leaf rust pressure was moderate and incidence ratings ranged between 0 and 80% with a mean of 18%. Leaf rust developed fairly late in the season and was quite variable across reps. Thirty four of sixty nine entries had leaf rust ratings of 0% including all but one of the top five yielding entries. USG 3120 (79.5 bu/acre) had the highest two-year mean yield of 38 entries. Leaf blotch ranged from 1.0 to 6.5 (0-9 scale) with a mean of 2.3. Heading day ranged from day 71 to day 90 with a mean of 83 (March 24). The highest yielding entry headed 6 days later than the mean and the lowest yielding entry headed 7 days later than the mean.

USG 3120 (79.5 bu/acre) had the highest mean yield over two years at Winnsboro. The varieties Pioneer 26R87, Progeny 870, AGS 2035, and Jamestown all had yields over 75.5 bu/acre.

Statewide Performance of Wheat Varieties

Two-year statewide variety performance data includes Baton Rouge, Jeanerette, Crowley, Alexandria, St. Joseph and Winnsboro locations for 2011 and St. Joseph and Winnsboro only for 2012 (Table 6). USG 3120 led statewide for two years with a yield of 71.1 bu/acre followed by LA01110D-150 (76.6 bu/acre), AGS 2035 (76.1), GA001138-8E36 (75.6 bu/acre) and Jamestown (75.3 bu/acre). AGS 2060 (59.9 lbs/bu) had the highest mean test weight over two years, followed by Jamestown (59.7 lbs/bu) and USG 3120 and Pioneer 26R61, both with a test weight of 59.1 lbs/bu.

USG 3120 (70.7 bu/acre) had the highest yield across the state for three years (Table 7). LA 01110D-150, Jamestown, and AGS 2035 all had three year mean yields above 69 bu/acre. All had a three year mean leaf rust rating of 0%. AGS 2060 (59.2 lbs/bu) had the highest mean three year test weight with a three year leaf rust rating of 0.

Performance of Oat Varieties

Performance of Oat Varieties Across Louisiana:

Horizon 270 (114.6 bu/acre) had the highest yield out of 24 entries across Louisiana (Baton Rouge and Winnsboro) for 2012 (Table 8). Two breeding lines, LA05011GSBS-30 and LA06012SBS-2 and two additional varieties, LA99016 and LA99017, also had yields above 85.7 bu/acre. All had crown rust ratings of 2% or below compared to the mean of 10%. The average crown rust rating was 10% and several entries had greater than 25% crown rust.

Horizon 270 led ten entries for two years, statewide, with a yield of 114.0 bu/acre (Table 9). The varieties Horizon 201, LA99016, TAMO 406, TAMO 411 and LA99017 also had two year yields above 81.0 bu/acre and crown rust scores of 9% or below. FL02011NUDA had the highest statewide two year test weight, well above the mean of 33.2 lbs/bu. and a crown rust rating of 1%.

Horizon 270 led eight entries statewide for three years with a yield of 85.4 bu/acre (Table 10). The varieties Horizon 201 and LA99016 also had yields above 75 bu/acre compared to the mean of 70.8 bu/acre. LA99016, LA99017 and Horizon 270 also led statewide for three years, all with test weights above 31 lbs/bu. The three year test weight mean was 30.5 lbs/bu. These four varieties all had crown rust ratings of 2% or less.

Baton Rouge:

Oat yields and test weights were poor at Baton Rouge in 2012 due to weather, severe lodging, and high crown rust pressure, with an average of only 46.8 bu/acre. Horizon 270 (82.8 bu/acre) was the highest yielding of twenty four entries tested at Baton Rouge in 2012 (Table 11). LA06012SBS-2 and TX05CS542 also had yields of 70 bu/acre or above compared to the mean of 46.8 bu/acre. FL02011NUDA (38.7 lbs/bu) had the highest test weight, well above the mean of 28.8 lbs/bu. Crown rust was severe with a mean incidence of 15% and contributed to reduced yields. The top two yielding entries had crown rust ratings of 0%. Winter stress was significant at Baton Rouge ranging from 2.5 to 6.5 with a mean of 3.6 (0-9 scale). Several strong storms prior to harvest contributed to lodging which averaged 4.0 (0-9 scale) and poor seed quality which averaged 6.5 (0-9 scale). By harvest, lodging was worse than the ratings would indicate and it was very difficult to combine plots uniformly, which contributed to high variability in yields. Heading day averaged between 75 and 95 with a mean of 87 (March 28). The two highest yielding entries both headed within three days of the mean.

Winnsboro:

Oat performance at Winnsboro was far superior to that of Baton Rouge due to cooler temperatures, lower rainfall, and less severe spring storms. Horizon 270 (146.4 bu/acre) had the highest yield of twenty four entries at Winnsboro in 2012 (Table 12), far exceeding the mean of 94.9 bu/acre. The breeding lines FL06050-N2 and LA05011GSBS-30 also had yields above 130 bu/acre. The hull-less variety FL02011NUDA (44.8 lbs/bu) had the highest test weight followed

by LA99016 (37.1 bu/acre) and Horizon 270 (36.7 bu/acre). The test weight mean was 34.7 lbs/bu. Heading day ranged from 77 to 95 with a mean of 88 (March 29). The two highest yielding entries, Horizon 270 and FL06050-N2, both headed within three days of the mean. Crown rust pressure was low at Winnsboro with a mean rating of 3.4%. Twenty of the twenty four entries had crown rust ratings of 0%.