



2026 SMALL GRAIN PERFORMANCE TRIALS

LAES Research Summary No. 234 August 2026



2026 SMALL GRAIN PERFORMANCE TRIALS

LAES Research Summary No. 234

This publication and the research reported herein were supported in part by checkoff funds from the

LOUISIANA SOYBEAN AND GRAIN RESEARCH AND PROMOTION BOARD

And with funding from

The US Wheat and Barley Scab Initiative.

This support is greatly appreciated.



THE LOUISIANA
Soybean & Grain
RESEARCH & PROMOTION BOARD



**U.S. Wheat & Barley
Scab Initiative**

*Matt Lee, Senior Vice Chancellor for Agriculture and Dean,
LSU College of Agriculture
Louisiana State University Agricultural Center*

*Mike Salassi, Executive Associate Vice Chancellor – LSU AgCenter
Director – Louisiana Agricultural Experiment Station*

The LSU AgCenter and LSU provide equal opportunities in programs and employment.

Table of Contents

Headings and tables are directly linked to corresponding page in the document.

Introduction.....	1
Characteristics Evaluated.....	2
Traits and Rating Scales used in Tables	3
Growing Conditions and Comments	4
South Louisiana Wheat Trials	
South Region Means.....	4
Baton Rouge	4
Crowley.....	4
Jeanerette	4
North Louisiana Wheat Trials	
North Region Means.....	
Alexandria.....	
Winnsboro.....	
Fusarium Headblight Reaction of Varieties.....	
Oat Performance Trials	
Oat Deer Preference.....	

Wheat Tables

Table 1. South Louisiana, 2026	
Table 2. Two-year South Louisiana.....	
Table 3. Three-year South Louisiana.....	
Table 4. Crowley, 2026.....	
Table 5. Jeanerette, 2026	
Table 6. North Louisiana, 2026	
Table 7. Two-year North Louisiana.....	
Table 8. Three-year North Louisiana.....	
Table 9. Alexandria, 2026.....	
Table 10. Somerset Plantation, 2026	
Table 11. Winnsboro, 2026.....	
Oat Tables	
Table 12. Baton Rouge, 2026	
Table 13. Oat Deer Preference.....	

Appendix A. Originating Agencies.....	
--	--

Performance of Small Grain Varieties in Louisiana, 2025-26

Stephen A. Harrison¹, Steven Abernathy¹, Kelly Arceneaux¹, Russell Anderson⁴, Dennis Burns², Noah DeWitt¹, Adam Easterling⁸, Dustin Ezell⁶, Katie Fic⁵, Jacob Fluitt³, Katie Fontenot¹, William Forbes⁹, Cole Gregorie⁸, Manoch Kongchum³, James Leonards³, Brady McKay⁶, Tashia Monaghan⁵, G. Boyd Padgett⁵, Trey Price⁶, Myra Purvis⁶, Daniel Stephenson⁵, William Waltman⁴, and Greg Williams⁷

Introduction

Small grain variety trials are conducted annually by scientists of the Louisiana State University Agricultural Center Agricultural Experiment Station (LSUAC) to evaluate grain yield, agronomic performance, and disease reaction of varieties and advanced breeding lines. The trials are conducted at seven LSUAC research stations representative of the major soil and climate regions of the state. Entries are included in the trials based upon previous performance or at the request of the originating breeder or company. The inclusion of an entry in the trials does not constitute an endorsement. The north Louisiana wheat trial included 8 released varieties (bold font) and 32 experimental lines (normal font). There were 38 entries in the south Louisiana performance trials.

New entries in the statewide trials are tested in the north Louisiana trial and in a south Louisiana vernalization trial, unless prior testing in other Baton

Rouge nurseries indicates an entry is adapted to south Louisiana, in which case it is also tested in the south Louisiana variety trial. South Louisiana consists of the Baton Rouge, Crowley, and Jeanerette locations, whereas North Louisiana consists of locations at Alexandria, Bossier City, St. Joseph, and Winnsboro. The vernalization trial is a two-rep yield trial in Baton Rouge that is intended to determine if a new variety trial entry is early enough and has enough disease resistance for south Louisiana.

When choosing varieties, growers should consult their local extension agents and choose varieties based on two-year data within a region, not based on a single year or location. Fusarium head blight reaction should also weigh heavily in variety choice, as this disease is difficult to control and frequently contributes to loss of yield and economic value.

1 Professor and variety trial coordinator, Research Associate, Research Associate, Assistant Professor, and Research Farm Assistant 2, respectively. SPESS Department, Baton Rouge.
2 Extension Specialist, Northeast Research Station, St. Joseph.
3 Research Associate, Associate Professor, and Research Associate, respectively. Rice Research Station, Crowley.
4 Research Associate, respectively. Red River Research Station, Bossier City.
5 Research Associates, Professor, and Professor, respectively. Dean Lee Research Station, Alexandria.
6 Research Associate coordinator and Farm Manager, Research Associate, Professor, and Research Associate, respectively. Macon Ridge Research Station, Winnsboro.
7 Research Associate. Iberia Research Station, Jeanerette.
8 Research Associate and Instructor. Sweet Potato Research Station, Chase.
9 Research Associate. Idlewild Research Station, Clinton.

Growers should also consider specific data from the LSUAC variety trial location that most closely matches the weather and soil conditions of their farm and should avoid growing a single variety on a large acreage. Growing several varieties helps to hedge against losing the entire crop to chance occurrences in weather or shifts in pathogen or pest races or virulence patterns. Yield, test weight, maturity, and disease resistance are important traits to consider when selecting varieties. Growers planting wheat early should avoid varieties that have a very early heading date to reduce the danger of spring freeze damage. Specific management and cultural practices for each location are presented at the bottom of the tables, along with unusual or key observations about that test. All plots were seeded at the recommended rate with treated seed provided by the originating agency or company (**Appendix A**).

Characteristics Evaluated and Statistics Reported:

Data are collected on grain yield, test weight, heading and maturity dates, plant height, lodging, and disease reaction, as appropriate at each location. Grain yield was adjusted to 13% moisture. **Least significant differences (LSD's)** are reported at the 10% probability level. An LSD of 10% probability ($\alpha=0.10$) is the degree of difference in a trait (like yield) that occurs between two varieties once in every 10 comparisons as a result of random chance due to greater soil fertility, better drainage, slightly greater harvest length, or any other "uncontrollable or unmeasurable factors" in the test, even if the varieties had the same genetic yield potential. If the LSD (0.10) for yield in a trial is 7.0 bu/acre, there is a 10% chance that two varieties with a reported yield difference of 7.0 bu/acre are genetically equal and a 90% probability that they have differences in genetic potential in that particular environment. LSD values are influenced by the degree of precision that soil fertility, stand establishment, plot length, harvest efficiency, and other variables of the trials are controlled, and by the number of replications of each variety or

treatment. The letters 'NS' are used in the text and Tables to indicate lack of significance (**not significantly different**) at the 10% probability level. Correlations are sometimes given to indicate the degree to which two traits, such as rust rating and yield, are related. A correlation between rust rating and yield of $r = -1.0$ would indicate that for every unit increase in rust there was a completely proportional decrease in yield.

Wheat leaf rust, stripe rust, and oat crown rust are reported as percentage of the upper two leaves affected by the disease. Two replications are evaluated for leaf and stripe rust, between flowering and the early dough stage of kernel development. Wheat and oat stem rust are reported on a scale of 0-9, where a 0 indicates no disease and a 9 indicates that the plant was killed by the disease. Stem rust is normally rated somewhat later than leaf rust as the disease appears later in the growing season.

Bacterial streak, Septoria leaf and glume blotch are rated on a scale of 0 to 9 during the dough stage of development. A rating of 0 indicates that no disease was present, while a 9 indicates very severe disease. The upper few leaves, heads, and stems below the head are the portions rated for these diseases. Since bacterial streak (black chaff) is not controlled by fungicides, it is important that this disease be distinguished from Septoria blotch. Heading day is given as calendar day (day of year). Lodging is rated on a 0-9 scale, where a 0 indicates that all plants were completely upright.

Fusarium head blight is rated on a 0-9 scale in yield plots and in inoculated, misted nurseries. A seed sample is rated as a percentage Fusarium Damaged Kernels (FDK) and then submitted to the USDA Wheat DON Lab at the University of Minnesota to determine Deoxynivalenol toxin (DON) concentration. The same procedure is followed for the misted nurseries except that samples are hand harvested and processed to avoid blowing out small, scabby seeds.

A Fusarium Index is calculated as $2 \times [(\text{field rating divided by the mean rating of all entries}) + (2 \times \text{FDK \% divided by the mean FDK rating of all entries}) + (3 \times$

$\text{DON divided by the mean of all entries})]$. FHB reaction type is based on this FHB index.

Traits and Rating Scales for LAES Wheat and Oat Performance Trials.

Trait	Abbrev.	Description
Bacterial Streak	BACT	Bacterial streak (black chaff) rated on a scale of 0 - 9, where 0 indicates no disease and 9 indicates severe disease on the flag leaf and head.
Yield	BUPA	Grain yield in bushels per acre adjusted to 13% moisture.
Fusarium DON toxin	DON	DON in ppm is determined at the USDA mycotoxin lab in Minneapolis. NIV is a similar compound to DON and is more common in south Louisiana.
Fusarium Damaged Kernels	FDK	FDK is measured as the percent of grains shriveled and discolored by FHB.
Fusarium Headblight	FHB	FHB is rated in the field on a scale of 0 - 9, where 0 indicates no disease and 9 indicates severe disease on the head.
Fusarium Index	FHBI	Is a numerical rating of Fusarium resistance calculated by converting FHB, FDK, and DON to a proportion of the test mean and then giving 2x weight to FDK and 3x weight to DON. FHB Index = $2 \times [(\text{FHB field rating divided by the test mean rating}) + (2 \times \text{FDK \% divided by the test mean}) + (3 \times \text{DON ppm divided by the mean})]$. With this scale 10 is exactly average FHB, FDK and DON, 5 is 50% of average and 30 is 300% of average FHBI.
Growth Habit	GH	Normally taken on oat trials where a lower number indicates earlier and more upright growth habit and a high number indicates a prostrate growth habit during early or mid-winter. Higher numbers may be indicative of winter hardiness.
Heading day	HD	Day of calendar year (days after December 31) at 50% heading.
Plant height	HT	Plant height in inches to top of head.
Lodging rating	LOD	Lodging rated on a scale of 0 - 9, where a 0 indicates no lodging and a 9 indicates complete lodging (all plants flat).
Leaf rust	LRFUST	Percent of upper two leaves affected by leaf rust, rated during grain fill. This rating is generally taken during soft to mid-dough but varies somewhat by location and variety.
Fusarium NIV toxin	NIV	NIV in ppm is determined at the USDA mycotoxin Lab in Minneapolis and is similar to DON.
Phenotype	PHE	Phenotypic rating, an overall visual rating prior to harvest. 0=poor, 9=excellent. This rating is a visual rating of 'eye-appeal'.
Relative Maturity	RELMAT	Relative Heading Date on a 0 - 9 scale where a lower number is earlier, taken after flag leaf stage and before maturity. Normally taken for trials that are not rated every week due to distance.
Seed Quality	SDQ	Visual quality rating on a 0 = poor to 9 = excellent scale based on plumpness, uniformity, and color.
Septoria	SEPT	Septoria leaf & glume blotch rated on a scale of 0 - 9, where 0 indicates no disease and 9 indicates severe disease on the flag leaf and head.
Stripe rust	STRUST	Percent of upper two leaves affected by stripe rust, rated between flag leaf and mid grain fill.
Test weight	TWT	Volume weight of grain in pounds per bushel
Vernalization	VERN	An indication of the degree of heading when not all varieties head properly. Rated on a 0 – 9 where a higher number indicates more normal heading and a lower number indicates heads emerged unevenly or not at all.

Growing Conditions and General Comments for 2024-2025

The 2025-2026 growing season started out well, with good stands established at most locations. In north Louisiana January was normal with adequate rain and no hard freezes. February was warm and dry. Early March was wet, followed by little rainfall the second half of March and moderate temperatures except for a hard freeze on March 17 that caused significant damage to early-heading varieties. The hard freeze followed a week of unusually warm weather. Mid-April was dry with significant rainfall early and late in the month. May was dry for the first half of the month and then quite wet.

In south Louisiana January was wet with a few hard freezes late in the month, and February was very dry with no significant freezes. March started out very wet but there was little rainfall after the middle of March and temperatures were moderate with no freezes. April through March 7 was normal, followed by heavy rainfall for the rest of the month.

Performance of Wheat Varieties Across South

Louisiana South Region Means

Jeanerette and Crowley produced good yield data in 2026. Baton Rouge was not harvested due to marginal stands and uneven vernalization that made combine harvest of questionable value given the heavy rainfall delays and the importance of getting the trials at Winnsboro out.

Across south Louisiana, the experimental line GA18117-58NCDH-23E37F had the highest yield of 38 entries. Yield ranged from 66.2 bu/acre to 15.1 bu/acre with a mean of 44.7 bu/acre. Two additional experimental lines, FL180013-075 and LA17006-LDH042 also had yields above 62.0 bu/acre. Test weights ranged from 59.7 to 51.8 lbs/bu with a mean of 55.4 lbs/bu. Leaf rust ratings pressure was high with six lines having over 20% severity. Leaf rust ranged from 0 to 56%. The top six

yielding entries all had had heading dates earlier than the mean of 78.8.

Hessian fly infestation in the Baton Rouge nursery (yield data not reported) was heavy and lines with high HF ratings yielded poorly across south Louisiana (Crowley and Jeanerette data), which may imply that HF also occurred in those trials but was not noticed. Three lines had a HF rating of 7.5 (0-9 scale) at Baton Rouge had yields of less than 33 bu/acre averaged across the other two locations.

Two years

Out of 10 entries, the experimental line GA18117-58NCDH-23E37F (65.1 bu/acre) followed by AGS 4043 (62.6 bu/acre) had the highest 2-year mean yields across south Louisiana (Table 2.) Three additional experimental lines, LA17006-LDH042, FL180013-075, and LA15093SB-30-3-3, as well as the variety AGS 3022, all had yields above 58.0 bu/acre compared to the mean of 56.4 bu/acre. Test weight ranged from 58.1 to 54.0 lbs/bu with a mean of 56.0 lbs/bu. With the exception of AGS 4043, the top six yielding entries all had heading dates earlier than the mean (81.5), low levels of leaf rust, and above average test weight.

Three years

Three entries have been tested in south Louisiana for each of the past three years. LA17006-LDH042 (68.0 bu/acre) had the highest yield and test weight. Test weight ranged from 55.3 to 57.8 lbs/bu with a mean 56.3 lbs/bu (Table 3). AGS 3022 (66.7 bu/acre) had the second highest yield with a test weight of 55.7 lbs/bu but also the worst leaf rust rating. The latest-heading entry yielded significantly less than the other entries.

Baton Rouge

Vernalization issues compounded with heavy rainfall after maturity that resulting in significant seed weathering and lodging

led to abandonment of this trial. Data other than yield and test weight are included in the south Louisiana tables.

Crowley

Yields at Crowley were excellent with a range of 10.2 to 85.9 bu/acre and a mean of 58.3 bu/acre (Table 4). The entry GA18117-58NCDH-23E37F had the highest yield followed by the experimental lines LA17006-LDH042, FL180013-075, LA16076C-6-2-3, and LA18198C-58-3, and the variety AGS 3022, all with yields above 72.0 bu/acre. Test weights were a little low with a range of 47.5 to 56.5 lbs/bu and a mean of 53.0 lbs/bu. Five entries with the lowest yield did not produce enough seed to measure test weight with the combine weigh system. The 15 highest yielding entries had heading days less than the mean of 75 while 9 of the 15 lowest yielding lines had heading dates of 80 or later, which demonstrates the importance of heading date in south Louisiana. Leaf rust pressure was light, ranging from 0 to 34% with a mean of 1.4%. The three lowest yielding entries had lodging ratings of 5 or greater which probably caused the low yields.

Jeanerette

The 2026 trial at Jeanerette had lower yield, than normal, ranging from 10.5 to 46.8 bu/acre, with a mean of 30.6 bu/acre and a CV of 24% (Table 5). The breeding line TX20D5145 had the highest yield, followed by GA18117-58NCDH-23E37F, LAVT19VDH-FHB-MAS11-10, AGS 3518, and LA16049C-27-3-3-2, all with yields of 45.5 bu/acre or greater. Test weights were good with an average of 57.9 lbs/bu and a range of 53.4 to 61.2 lbs/bu.

The Jeanerette test had a wide range of heading dates from March 11 (70) to April 12(102). Leaf rust pressure was high, ranging from 0 to 78.8% with a mean of 10%.

Performance of Wheat Varieties Across North Louisiana

The trial at Bossier City was lost due to poor stands. In 2026, the trial was planted at Somerset plantation in Newellton, LA as

a delta site rather than at St. Joseph. Trials were conducted with and without fungicide at Alexandria and Winnsboro. The test is analyzed as two separate trials, as the fungicide and no-fungicide splits are planted in the same field, but the fungicide level is not randomized as six blocks. Fungicide application increased yield on average by 18.8 bu/acre in north Louisiana with only one entry yielding higher without a fungicide application.

With Fungicide

The trials at Alexandria and Winnsboro produced excellent yields ranging from 21.1 to 116.0 bu/acre with a mean of 74.8 bu/acre (Table 6). The entry 18VTK10-23 had the highest yield, followed by followed by AGRIMAXX 564, VA20W-142, AGRIMAXX 543, 18VTK10-188, and USG 3437, tested as LA19333-NDH31), all with yields above 108.0 bu/acre. The twelve highest-yielding entries had yields above 100.0 bu/acre.

Six entries had test weights greater than 57.0 lbs/by led by LA17006LDH042 at 57.9 lbs/bu. The average test weight was 55.3 lbs/bu. There was a slight impact of fungicide over non-fungicide treated reps with a mean difference of 0.9 lbs/bu.

Without Fungicide

Freeze damage was the single most important determinant of yield across north Louisiana as early and medium-early heading entries were significantly damaged by a mid-March hard freeze. The correlation between yield and freeze damage was -0.90** and -0.94 for non-fungicide and fungicide trials.

Yield without fungicide across three north Louisiana ranged from 19.9 to 88.3 bu/acre with a mean of 56.1 bu/acre (Table 6). The highest-yielding entry in North Louisiana without fungicide was GA17034ID-22-3-5-23LE29. The varieties USG 3437, AGRIMAXX 492, and AGRIMAXX 564 had mean yields above 80.0 bu/acre.

Test weight ranged from 57.6 (18VTK10-23) to 50.0 lbs/bu

with an average of 54.7 lbs/bu. Leaf rust pressure was moderate, ranging from 0 to 55% with a mean of 9.5%. Hessian fly occurred in some varieties at the Newellton location.

Two Years

Eleven entries tested in North Louisiana without fungicide for two years had a yield range from 37.5 to 75.2 bu/acre with a mean of 57.2 bu/acre (Table 7). USG 3437, AGRIMAXX 492 and AGS 4043 had the three highest two-year average yields. The two-year average test weight ranged from 52.6 to 56.2 lbs/bu with a mean of 54.8 lbs/bu. Leaf rust severity ranged from 0% to 28% with a mean of 6.5%. Data for FHB, FDK, and DON are from 2025 only since FHB did not develop in 2026. There were significant differences among entries for FHB, FDK, and DON in the misted nursery in 2025.

In the fungicide treated plots, AGRIMAXX 543 and USG 3437 yielded over 82.0 bu/acre. The mean yield of eleven entries was 62.5 bu/acre. The effect of fungicide on yield and test weight cannot be determined from Table 7 since the Newellton location did not have a fungicide split.

Three Years

AGRIMAXX 492 had the highest yield of eight entries tested in North Louisiana without fungicide for three years. Yield ranged from 47.9 to 76.2 bu/acre and averaged 62.0 bu/acre (Table 8). USG 3437 and AGS 4043 also had yields above the mean. Test weight ranged from 54.0 to 56.3 lbs/bu with a mean of 55.6 lbs/bu for the non-fungicide trial. Stripe rust and leaf rust disease pressure has been moderate for the past three years with means of 3.9% and 6.5%, respectively. AGS 4030 had 26% stripe rust severity, substantially higher than other entries. FHB data are from 2024 and 2025. There were significant differences among entries for FHB, FDK, and DON. Agrimaxx 543 had the highest yield with fungicide for three years (78.6 bu/acre).

Alexandria

The Dean Lee Research Station trial was excellent with high yields greater than 100 bu/acre for a number of entries (Table 9). The average yield in the fungicide protected split was 79.6 bu/acre and ranged from 17.7 to 125.7 bu/acre. AGRIMAXX 564 had the highest yield followed by 18VTK10-23, 18VTK10-188, and SC22W198, all with yields above 116.0 bu/acre. The average test weight was 55.5 lbs/bu and ranged from 52.8 to 57.5 lbs/bu.

The non-fungicide plots had a mean yield of 75.1 bu/acre, 4.5 bu/acre less than the fungicide split, and ranged from 19.1 to 117.3 bu/acre. AGS 3518 had the highest yield followed by AGRIMAXX 564, 18VTK9-68, and USG 3437, all with yields above 111.0 bu/acre. Fungicide application increased test weight by an average of 1.2 lbs/bu. Leaf rust pressure was high, with severities from 0 to 80% and a mean of 17.5%. There was minimal variation in freeze damage ratings in this trial.

Newellton

There was significant freeze damage to early-heading entries in the Newellton trial (Table 10). Stands were marginal in some plots and leaf rust severity was high. As a result, the CV (scaled unexplained variation) was quite high (28%) and yields were low. The average yield was 31.5 bu/acre with a range of 3.4 to 63.0 bu/acre. The entry SC22W281 had the highest yield followed by USG 3437, AGRIMAXX 564, GA17034ID-22, and AGRIMAXX 492, all with yields above 50.0 bu/acre. The average test weight was 55.1 lbs/bu with a range of 50.0 to 57.9 lbs/bu. Leaf rust pressure was high, ranging from 0 to 68% with a mean of 12.1%. Twelve of the thirteen highest yielding entries had rust ratings of 0%.

Winnsboro

The trial had severe freeze damage on early-heading entries and high yield on those entries with no freeze damage (Table 11). Yields the fungicide split ranging from 15.0 to 111.8 bu/acre and an average of 69.9 bu/acre (Table 11). VA20W-142 was the highest-yielding, followed by 18VTK10-23,

AGRIMAXX 543, SCNC15305-43, AGS 3518, and USG 3437, all with yields above 100 bu/acre. Test weights ranged from 47.9 to 59.3 lbs/bu with an average of 54.6 lbs/bu.

Yield in the non-fungicide treated trial had an average yield of 60.11 bu/acre, 9.8 bu/acre greater than the non-fungicide trial mean, with a range of 11.5 bu/acre to 103.2 bu/acre. 18VTK10-23 had the highest yield followed by VA20W-142, and GA17034ID-22-3-5-23LE29, all with yields above 91.0 bu/acre. The commercial varieties USG 3437, AGRIMAXX 492, AGS 3518, and AGRIMAXX 564 all had yields above 74 bu/acre. Fungicide-treated plots had a mean test weight of 0.26 lbs/bu greater than no-treated plots. Disease pressure was relatively low with an average leaf rust severity of 5.4%. Significant lodging occurred as a result of the hard freeze in March that damaged the lower stems of medium-early heading entries.

Fusarium head blight Screening Results:

Fusarium head blight did not develop this year, even in inoculated and misted disease nurseries, likely due to the very dry and breezy period from late March to late April. Additionally, it was not possible to separate shriveled kernels resulting from freeze damage and from Fusarium damaged kernels in the Winnsboro misted nursery. The misted FHB nursery was lost in Baton Rouge this year due to heavy rain and weathering after maturity.

Oat Performance Trials:

The oat performance trial lodged severely due to torrential rains over a ten-day period after maturity in Baton Rouge. That trial was not harvested. The trial in Alexandria was also lost due to severe lodging due to heavy rains in 2026. Several planter tubes clogged in the Winnsboro trial resulting in uneven plots size that prevented accurate yield determination. Disease and agronomic data were collected in Alexandria and Baton Rouge

(Tables 12 and 13).

Alexandria

Stem rust pressure was low at Alexandria in 2026 (Table 12). Rust ranged from 4 to 0% with a mean of 1.2. Several hard freezes in late January, with temperatures in the upper 20's, resulted in significant freeze damage with a mean of 3.1 on (0-9) scale.

Baton Rouge

Crown rust pressure was high at Baton Rouge, ranging from 70 to 0% with a mean of 18% (Table 13). Eleven of 24 entries had less than 10% crown rust while three entries had greater than 50% severity. There were significant differences among entries for leafiness (biomass) rating, a visual estimate of forage potential.