APPLICATION FOR VARIETY CERTIFICATION

The following must be made available by the originator, developer, owner or agent for a variety to be considered for certification. Attachments will be used to provide information requested. Additional instructions for items B, C and d are attached. If a claim is made in any of the descriptor information provided, data must be provided to support the claim.

NAME OF APPLICANT:

ADDRESS: Louisiana State University Agricultural Center; 104 MB Sturgis Hall; Baton Rouge, LA 70803

A. Variety Name or Temporary Designation: **LA19333-NDH31 wheat** (*Triticum aestivum*)
(Family, Kind, Genus, Species)

B. Origin and Breeding History of the Variety:

LA19333-NDH31 is a double haploid derived wheat breeding line. It was developed by the Louisiana State University Agricultural Center (LSU AgCenter) under the seven-university SUNGrains cooperative small grain breeding program.

LA19333-NDH31 has the pedigree:
LA15203-LDH112 (AGS 3000 / Hilliard) / AGS 4043 (GA15VDH-FHB-MAS23-18LE43)

LA15203-LDH112 was an advanced double haploid line developed by the LSU AgCenter wheat breeding program from the cross between Virginia Tech variety 'Hilliard' and LSU AgCenter variety 'AGS 3000'

AGS 4043 is a University of Georgia double haploid line produced from marker-based topcross enrichment from a cross made at Virginia Tech University. It was trialed as GA15VDH-FHB-MAS23-18LE43, with the pedigree MD08-26-H2-7-12-9 / VA09W-73 (SS520/VA99W-188// TRIBUTE) // VA12W-54 [NC00-15389/GF951079-2E31//USG3555(VA02W-555)], wherein MD08-26-H2-7-12-9 was a germplasm line developed by the University of Maryland wheat breeding program carrying the *Fhb1* gene for Fusarium head blight resistance.

- The cross was made in the greenhouse in early spring of 2019.
- F1 seed were sent to the North Carolina State University wheat breeding lab to produce double haploids in the fall of 2019.
- Resulting DH lines were planted in Baton Rouge and Winnsboro in the fall of 2021, and the 31st headrow of the LA19333 North Carolina Doubled Haploid family was harvested as LA19333-NDH31.
- LA19-31 was evaluated in a genotyped observation yield trial (Wheat Prelimnary Genomic Selection; WPGS), planted in the fall of 2021 and harvested in the spring of 2022
- Seed from the WPGS trial was used to plant an increase strip of LA19-31 in Winnsboro, Louisiana.
- Seed from that trial was sent to collaborators as part of the SunPre (SunGrains Preliminary) sparse yield trial conducted at 5 locations in the fall of 2022, with yield and other data collected in the spring of 2023
- Based on performance in the SunPre trial, seed from the Winnsboro seedc incrasese was entered into the Gulf Atlantic Wheat Nursery (GAWN), and into state variety trials.

- Increase seed was planted in Baton Rouge, Louisiana in the fall of 2023. An additional space-planted strip of LA19-31 was also planted in Baton Rouge to facilitate rogueing for seed purification.
- Based on performance in the GAWN and in state trials, seed from the Baton Rouge increase strip of LA19-31 was used to enter LA19-31 into the Uniform Southern Soft Red Winter Wheat Nursery and state trials in Louisiana, Texas, Mississippi, Alabama, Georgia, South Carolina, and Virginia.
- Seed from the heavily-rogued spaced purification increase in Baton Rouge was sent for a 1-acre breeder's seed increase in Plains, Georgia.

LA19333-NDH31 has proven to have stable yield across multiple years of testing. It contains fewer than 4 / 1000 taller variants, up to 2/1000 awnless variants, and fewer than 1/1000 blue-waxy variants.

C: A detailed description of the morphological, physiological and other characteristics of the plants and seed that distinguish it from other varieties. Note: This will be the description used by field inspectors to determine varietal purity.

LA19333-NDH31 is a fully awned soft red winter wheat with a medium-early maturity habit. Plant height is short and small heads are tightly bunched in rows, approximating the visual appearance of AGS 4043. Flag leaves are dark green, approximating 137A on the RHS color chart.

Molecular markers indicate that LA19333-NDH31 is an *Rht-D1* semidwarf wheat. It has vernalization sensitive alleles at both the *vrnA1* and *vrnB1* loci, and has a prostrate winter growth habit, though it emerges fully and heads normally even in low-vernalization environments. LA19333-NDH31 has the *Lr18* rust resistance gene and the *Lr68* slow-rusting adult plant resistance gene. LA19333-NDH31 contains the *Pm-1A* gene for resistance to powdery mildew and the *Sbm1* gene for resistance to soil born mosaic virus. It is a soft, red wheat with the *R-A1* color gene and *Pin-D1a* softness gene.

Based on data form the 2024 Gulf Atlantic Wheat Nursery across 8 locations:

- LA19333-NDH31 is medium-early in heading, 2.0 days earlier than AGS 4043 and 3.0 days earlier than Hilliard.
- LA19333-NDH31 is short, 31.9 inches across locations, 0.9 inches taller than AGS 4043 and 4.6 inches shorter than Hilliard.

D. Evidence (data, graphs, charts, pictures, etc.) Supporting identity of the variety and any statements or claims made concerning its performance characteristics, (e.g. yield insect or disease tolerance, lodging).

ENT		PED	GENE	YIELD						TEST WT			
				X-all	x	X	x	X	x	X	x	X	x
	DESIG			ALL		SC GA VA		LA		**LOC		ALL	
1	HILLIARD	Boyles		65.1	26	74.8	31	73.2	9	55.8	33	55.8	27
2	PIONEER26R41	Harrison		63.7	30	70.1	42	78.5	2	55.2	42	55.2	53
3	SS8641	Meggett		61.8	34	74.1	34	57.3	34	55.7	34	55.7	40
4	AGS-4043	Meggett		67.6	14	84.0	6	63.9	27	57.5	14	57.5	17
5	DYNA-GRO-9332	Sutton		68.1	12	80.1	17	70.5	13	58.1	7	58.1	30
20	X17-1674-24-14-5-2			41.0	60	48.8	60	38.1	53	49.3	60	49.3	59
24	LA13176CB-15-1-3			69.5	8	82.3	11	75.0	7	54.6	47	54.6	43
25	LA17179SSP-32-3			69.5	9	80.2	16	67.1	19	57.7	13	57.7	7
26	LA14272C-86-3-1-3			63.8	29	64.3	56	73.2	10	59.2	2	59.2	4
27	LA18003-NDH069			62.3	33	69.1	45	59.9	30	56.4	27	56.4	34
28	LA19333NDH-31			74.7	1	85.5	2	86.3	1	58.2	6	58.2	1
29	LA19333NDH-34			71.0	6	84.1	5	66.8	21	57.8	11	57.8	8
	MEAN			62.4		74.6		58.5		55.8		57.3	
	CV												
	LSD												
	RSQ												

Yield performance of LA19–31 in the 2024 GAWN compared to relevant checks, including parent AGS 4043, other LSU AgCenter experimental lines, and the lowest-yielding experimental line. LA 19-31 has strong across-location performance for both grain yield (given in bu/acre assuming a 60 lb/bu test weight) and test weight (given in lb/bu).

ENT		HDDAY		PLTHT	
		X	x	X	x
	DESIG	NO GFL			
1	HILLIARD	100	33	36.5	30
2	PIONEER26R41	105	11	34.6	45
3	SS8641	100	34	37.1	25
4	AGS-4043	99	38	31.0	60
5	DYNA-GRO-9332	101	29	38.6	10
20	X17-1674-24-14-5-2	114	1	40.2	3
24	LA13176CB-15-1-3	98	46	39.0	6
25	LA17179SSP-32-3	95	60	33.8	52
26	LA14272C-86-3-1-3	98	50	37.1	24
27	LA18003-NDH069	102	23	38.7	9
28	LA19333NDH-31	97	53	31.9	58
29	LA19333NDH-34	98	41	36.4	32
	MEAN	101.0		36.3	

Heading date and plant height performance of LA19-31 in the 2024 GAWN. LA19-31 is short (mean of 31.9 inches, ranked 58/60 for height, comparable to AGS 4043), and early to medium-early (mean of 97 days, slightly

earlier than AGS 4043, and ranked 53/60 in a test consisting of both Southern lines and Mid-Atlantic lines with delayed heading).

A wheat spike taken from a plot of LA19333-NDH31 in Plains, Georgia on April 04, 2025. The spike is small, with 17 spikelets.

Photo of a plot of LA19333-NDH31 taken in Plains, Georgia on April 05, 2025.

E. A statement delineating the geographical area or areas of adaptation of the variety.

LA19333-NDH31 is adapted to the Southeastern US.

F. Procedure for maintaining stock seed classes and number of generations a variety may be multiplied.

G. Description of how variety is to be constituted if a particular cycle of reproduction or multiplication is required.

H. Additional restrictions, if any, with respect to geographical area of seed production, age of stand, or other factors affecting genetic purity.

I. Sample of seed.

Will application be made to Plant Variety Protection Office? **Yes**

If yes, will the application specify that the variety is to be sold by variety name only as a class of certified seed?

Date: ___ Signature of Applicant

2020 SUNWHEAT DATA

ENT	DESIG	YIELD ALL LOC	Yield rank	PCT MEAN	YIELD GA LA TX	Yield rank	Test wt (lbs/bu) NO	Head Day (of yr)	Plant ht (in)	Lodging (0-9)	Powd Mild (0-9)	Leaf rust (0-9)	Stripe Rust (0-9)	FHB (0-9)	FDK %	DON PPM	Hessian Fly (0-9)
1	AGS 3030	63.1	68	93	54.8	79	56.7	87.5	33.5	1.8	1.0	0.0	0.1	4.8	41	0.2	2.5
2	SS8641	71.7	34	##	61.3	55	58.2	92.5	33.3	1.1	1.0	0.0	0.4	6.2	75	1.6	3.5
3	Hilliard	84.1	2	##	75.4	1	58.0	95.9	37.1	0.3	2.0	7.0	0.1	2.0	11	0.2	4.0
4	Savoy	63.1	67	93	55.4	76	56.5	86.3	29.8	3.4	1.0	0.0	1.5	6.3	39	0.4	4.5
33	LA16020LDH-22	76.4	9	##	72.6	4	58.1	86.5	33.1	0.8	2.0	0.0	0.0	4.4	8	0.6	2.5
	MEAN (94 ent)	67.9			61.2		58.3	93.2	34.5	1.1	2.6	0.7	1.2	3.4	19	0.5	3.8

LDH22 in mid grain fill.

Mature head

LA19-31

A new disease-resistant winter wheat variety with strong yields across the Southeast US

Noah DeWitt[1], Stephen Harrison[1], Paul (Trey) Price[1], Katie McCarthy[1], Kelly Arceneaux[1], and Steven Abernathy[1]

[1]Louisiana State University Agricultural Center

SUMMARY

LA19-31 (LA19333-NDH31) is a double haploid wheat line developed by the Louisiana State University Agricultural Center in collaboration with the SunGrains® breeding cooperative. The line is a short, bearded (awned) soft red winter wheat line with intermediate-early maturity and a moderate-to-low vernalization requirement. LA19-31 was developed from a cross between two lines with wide adaptation and strong FHB resistance, and has performed well for grain yield across three years of yield testing. LA19-31 has strong resistance to the common pests and pathogens of the Southern United States: Fusarium head blight, Hessian fly, powdery mildew, stripe rust, leaf rust, and soilborne mosaic virus. LA19-31 has moderate resistance to bacterial leaf streak, barley yellow dwarf virus, and glume blotch.

LA19-31 has consistently demonstrated moderate to high test weights across regional trials, and has typical soft wheat milling and baking quality. Cooperative regional and state variety trials in 2024 and 2025 demonstrate that LA19-31 is competitive with or exceeds grain yield of current released varieties across the Southeast US, making it a broadly adapted line that is highly competitive for yield from Texas to Virginia. Combining elite yield with a strong disease resistance package, LA19-31 is a variety capable of producing high yields for wheat growers across the Southeast United States.

LA19-31 was increased in Plains, GA by the Georgia Seed development Commission (GSDC) during 2025, and 121 bushels (approximately 7,000 pounds) of breeder seed are available. The seed source of this breeder's seed increase was a space-planted seed block grown in Baton Rouge in 2024, heavily rogued to remove off-types. Foundation seed of LA19-31 will be produced at the GSDC annually following a suitable agreement between the GSDC and the licensee.

BREEDING AND DEVELOPMENT HISTORY

LA19-31 has the pedigree:

LA15203-LDH112 (AGS 3000 / Hilliard) / AGS 4043 (GA15VDH-18LE43)

LA15203-LDH112 was an advanced double haploid line developed by the LSU AgCenter (LSUAC) wheat breeding program from the cross between Virginia Tech variety 'Hilliard' and LSUAC variety 'AGS 3000'. Hilliard (VA11W-108) is a very broadly-adapted, high-yielding Virginia Tech release with the pedigree Pioneer 25R47 / Jamestown. AGS 3000 (LA06146E-P4) is an early, scab-resistant, high-yielding LSUAC release from a cross between

LSUAC variety AGS 2060 and Jamestown. Jamestown (VA02W-370; Roane / Pioneer 269), found in the pedigree of both parents, is a Virginia Tech cultivar known as a source of the native "Jamestown" FHB resistance QTL (Fhb 1B Jamestown). AGS 2060 (LA9560CA-22-1; GA85430-D17-2-P1 / Coker 9663) is a known source of quantitative FHB resistance. This cross (LA15203) lead to a number of high-yielding, very broadly-adapted LSUAC experimental lines that have consistently performed well in trials across the Southeast United States.

AGS 4043 is a University of Georgia double haploid line produced using marker-based topcross enrichment from a cross made at Virginia Tech University under the US Wheat and Barley Scab Initiative southern variety development project. It was trialed as GA15VDH-FHB-MAS23-18LE43, with the pedigree MD08-26-H2-7-12-9 / VA09W-73 (SS520/VA99W-188// Tribute) // VA12W-54 [NC00-15389/GF951079-2E31//USG3555(VA02W-555)]. MD08-26-H2-7-12-9 was a germplasm line developed by the University of Maryland wheat breeding program carrying the *Fhb1* gene for Fusarium head blight resistance, and AGS 4043 is a high-yielding *Fhb1* variety currently grown from the Carolinas to Southern Georgia and Alabama.

The cross (LA19333) was cross 333 made in the greenhouse in spring of 2019. F_1 seed were sent to the North Carolina State University wheat breeding lab to produce double haploids in the fall of 2019. Resulting DH lines were planted at Baton Rouge and Winnsboro in the fall of 2021, and the 31st headrow of the LA19333 family was harvested as LA19333-NDH31. LA19-31 was evaluated in a genotyped observation yield trial (Wheat Prelimnary Genomic Selection; WPGS), planted in the fall of 2021 and harvested in the spring of 2022. Seed from the WPGS trial was used to plant an increase strip of LA19-31 in Winnsboro, Louisiana in the Fall of 2022, and sent to collaborators as part of the SunPre (SunGrains Preliminary) sparse yield trial planted at 5 locations in the fall of 2022, with yield and other data collected in the spring of 2023. Based on strong multi-location grain yield performance in the SunPre trial, seed from the Winnsboro seed increases was entered into the Gulf Atlantic Wheat Nursery (GAWN), and into state variety trials in Louisiana, Alabama, Mississippi, and South Carolina. The same seed was used in the Fall of 2023 to plant both a traditional seed increase in Baton Rouge and an additional space-planted strip, where seeds are spaced in a 7" x 15" grid to facilitate rogueing of off-types for seed purification.

Based on performance in the GAWN and state trials, seed from the Baton Rouge increase strip of LA19-31 was used to enter LA19-31 into the Uniform Southern Soft Red Winter Wheat Nursery and state trials in Louisiana, Texas, Mississippi, Alabama, Georgia, South Carolina, and Virginia. Seed from the spaced purification increase in Baton Rouge was sent to GSDC to plant an approximately 1.5-acre breeder's seed increase in Plains, Georgia. About 121 bushels are available from this increase.

TRIAL PERFORMANCE

Cooperative Yield Nursery History

Harvested headrow seed of LA19-31 was planted in unreplicated plots as part of the WPGS (Wheat Preliminary Genomic Selection) observation yield trial in both Baton Rouge and Winnsboro in the fall of 2021. DNA was collected from leaf tissue and sent to the USDA

Eastern Regional Small Grains Genotyping Lab to collect Genotype-by-Sequencing (GBS) marker data. Genomic estimated breeding values (GEBVs) were made available based on the marker data and historic data on cooperative yield and disease nurseries. LA19-31 was selected for harvest based on visual appearance in Winnsboro and GEBVs for yield and Fusarium disease traits. LA19-31 was advanced to the SunGrains Preliminary nursery (SunPre) as one of 40 LSUAC lines based in part on those factors, along with its strong observed yield in the one-rep test at both locations (17^{th} of 185 in Winnsboro and 32^{nd} of 185 in Baton Rouge).

Seed of LA19-31 harvested from Winnsboro (WPGS plot 1094) was distributed to collaborators at Texas A&M, University of Arkansas, University of Georgia, and Clemson University. An unreplicated plot of LA19-31 was planted at one location in each state (along with Winnsboro, LA), as part of the augmented block SunPre trial. LA19-31 had the second-highest overall yield across locations (of 219 total entries), and its single rep at Florence, SC was the seventh-best yielding plot at that location.

Due to its strong yield performance and disease resistance, LA19-31 was advanced past the second-stage SunWheat cooperative yield trial and placed directly in the third-stage Gulf Atlantic Wheat Nursery (GAWN). In the Spring of 2024, LA19-31 placed second out of 60 lines for overall yield, and fifth overall in just the Mid-Atlantic locations in Virginia, Kentucky, North Carolina, and South Carolina, demonstrating its broad adaptation. LA19-31 was also entered into the South Carolina, Alabama, Louisiana, and Mississippi state trials in 2024, placing second overall in the south Louisiana test for yield, fifth overall in the Alabama test, and 9th overall in the South Carolina test. Data collected on grain harvested from inoculated FHB nurseries demonstrated that LA19-31 had moderate resistance to FHB, and was observed to be resistant to stripe rust in multiple locations that year with heavy disease pressure.

LA19-31 was entered into the 2024-2025 USDA Uniform Southern Soft Red Winter Wheat Nursery (USS) and 2024-2025 Uniform Southern Scab Nursery (USN). The line was also entered in state variety trials in Texas, Louisiana, Mississippi, Alabama, Georgia, South Carolina, and Virginia. One-year and two-year averages for yield performance in those state trials is given below as appropriate.

MAJOR GENES

- *QHF_{7D}*: One of two major Hessian Fly resistance genes identified as actively conferring resistance to current Hessian Fly biotypes in Southern Soft Wheat germplasm. Unlike *H13*, QHF_{7D} confers strong field resistance, but does not show a resistant reaction type in greenhouse screening. In a field context, QHF_{7D} has a resistance effect comparable to *H13*.
- *Yr4BL*: A major adult plant resistance QTL for stripe rust. With the development of virulence to *Yr17* in stripe rust populations in the Eastern United States, *Yr4BL* has been identified as the primary QTL conferring resistance to stripe rust in Southern soft

wheat germplasm.

- *Yr17*: *Yr17* continues to provide some additional stripe rust resistance, and has been associated with higher yields in historic data. The translocation segment containing *Yr17* also confers resistance to wheat blast, a potential new disease of wheat currently found in Brazil.
- *pm1A*: A major leaf rust resistance gene that confers total resistance to powdery mildew in the Eastern United States.
- *Lr18*: A major leaf rust resistance gene that confers total resistance to leaf rust in the Eastern United States.
- *Sbm1*: The presence of *Sbm1* confers complete resistance to Soil Borne Mosaic Virus in the Southeastern United States.
- *b1*: The *b1* allele at the awn suppressor locus creates a bearded (awned) phenotype.

Molecular markers indicate that LA19-31 is an *Rht-D1* semidwarf wheat. It has vernalization sensitive alleles at both the *vrnA1* and *vrnB1* loci, and has a prostrate winter growth habit, though it emerges fully and heads normally even in low-vernalization environments. LA19-31 has the *Lr18* leaf rust resistance gene, the *Lr68* slow-rusting adult plant resistance gene, and *Yr4BL* and *Yr17* partial stripe rust resistance genes. It is also a carrier of QHF_{7D}, a QTL associated with field resistance to Hessian fly. LA19-31 contains the *pm1A* gene for resistance to powdery mildew and the *Sbm1* gene for resistance to soil-born mosaic virus. It is a soft, red wheat with the *R-A1* color gene and *Pin-D1a* softness gene.

TRIAL DATA

Plant Height and Heading Date Results

Table 1: Mean heading date (day of year) in multiple locations shows that LA19-31 has an intermediate-early heading date comparable but slightly earlier than parent line AGS 4043. LA19-31 was the 52nd-latest line of 60 total lines in the GAWN, on average two days earlier than AGS 4043. Locations include Baton Rouge, LA (LAB), Winnsboro, LA (LAW), Plains, GA (GAP), McGregor, TX (TXM), Florence, SC (SCF), Warsaw, VA (VAW), Marianna, AR (ARM), and Lexington, Kentucky (KYL):

Heading Date in 2024 GAWN

	LAB	LAW	GAP	TXM	SCF	VAW	ARM	KYL	**Avg**	Rank (of 60)
LA19-31	76.0	89.0	90.0	86.5	96.5	108.5	102.0	117.1	**95.7**	52
AGS 4043	79.0	91.0	91.0	87.5	96.5	110.5	104.7	121.5	**97.7**	38
SS 8641	94.0	88.0	89.0	86.0	95.5	111.0	103.3	121.2	**98.5**	35
Hilliard	86.0	95.0	99.0	88.0	94.0	110.0	105.0	120.1	**99.6**	28
Dyn-Gro 9332	82.0	95.0	95.0	88.5	96.5	114.0	105.7	123.1	**100.0**	27
Pioneer 26R41	90.0	99.0	106.0	92.0	102.0	115.5	105.3	120.7	**103.8**	9

Table 2: Mean heading date relative to common varieties in state variety trials. In state trials, LA19-31 had a medium-early heading date comparable to AGS 4043, being later than AGS 3022 and marginally earlier than Hilliard. In the southern Louisiana trial, LA19-31 was 1.7 days earlier than AGS 4043, and nearly a full week later than AGS 3022. Data for southern Louisiana and Northern Louisiana trials is over two years (2024 and 2025), while South Carolina and Virginia data is from one year:

Heading Date in State Variety Trials

	S. LA	N. LA	SC	VA
AGS 3022	82.9	89.6	94	
LA19-31	89.4	91.1	96	120.0
AGS 4043	87.7	91.2	97	121.6
Hilliard			97	120.7

Table 3: Mean plant height relative to check varieties in the 2024 GAWN. LA19-31 is a short line comparable in height or marginally taller than parent AGS 4043, which was ranked last for height of 60 in the GAWN, but was still the third-shortest line in the trial, 0.9 inches taller than AGS 4043 and fully 4.5 inches shorter than Hilliard:

Plant height (in.) in 2024 GAWN

	LAB	KYL	VAW	Avg	Rank (of 60)
AGS 4043	31.0	28.4	33.5	**31.0**	60
LA19-31	35.0	28.8	32.0	**31.9**	58
Pioneer 26R41	37.0	32.4	34.5	**34.6**	45
Hilliard	38.0	34.9	36.5	**36.5**	30
SS 8641	42.0	32.7	36.5	**37.1**	25
DynaGro 9332	40.0	37.3	38.5	**38.6**	10

Fusarium Head Blight Screening

Table 4: FHB phenotypes (FHB severity, Fusarium Damaged Kernels, Deoxynivalenol content) from misted and inoculated nurseries from the 2024 GAWN. FDK and DON data is collected on harvested samples from rated headrows. FHB resistance of LA19-31 is comparable to AGS 4043, an *Fhb1* line with strong FHB resistance, with 2% higher FDK and 0.2 ppm higher DON across three locations:

GAWN 2024 FHB Data

	Severity (0-9)					FDK (%)				DON (ppm)			
	GAP	LAA	LAW	VAW	Avg	LAA	LAW	VAW	Avg	LAA	LAW	VAW	Avg
Min	0.0	0.0	1.0	1.5	**0.6**	5	3	5	**4**	2.5	0.5	2.5	**1.8**
AGS 4043	1.2	1.0	4.0	6.0	**3.1**	10	8	13	**10**	4.8	0.7	6.9	**4.1**
LA19-31	1.6	2.5	7.0	6.5	**4.4**	5	11	20	**12**	3.5	0.8	8.5	**4.3**
Hillard	0.8	1.5	2.0	5.0	**2.3**	30	32	18	**27**	6.9	4.3	8.2	**6.5**
Mean	1.6	2.3	4.5	5.4	**3.4**	35	33	24	**30**	8.1	6.9	9.6	**8.2**
Pioneer 26R41	0.4	2.0	3.0	5.5	**2.7**	35	41	38	**38**	9.5	10.3	16.1	**12.0**
SS 8641	2.6	8.0	8.0	8.5	**6.8**	85	37	55	**59**	18.5	1.5	24.1	**14.7**
Dyna-Gro 9332	5.8	2.5	4.0	6.0	**4.6**	45	25	23	**31**	17.5	9.8	25.5	**17.6**
Max	5.8	8.0	8.0	8.5	**7.6**	90	100	55	**82**	18.8	33.1	25.5	**25.8**

Table 5: FHB phenotypes (FHB severity, Fusarium Damaged Kernels, Deoxynivalenol content) from misted and inoculated nurseries across two years of the Louisiana state variety trial. FHB traits in 2024 come from the Alexandria, Louisiana nursery (LAA), while 2024 traits comes from the Winnsboro and Alexandria nurseries. No DON data is available at present for 2025. LA19-31 is classified as "Moderately Resistant" across two years of data, comparable to other moderately resistant varieties such as AGS 3022 and Progeny #CHAD. In this trial, LA19-31 has somewhat higher values for FHB traits than AGS 4043, particularly DON (2.6 ppm for AGS 4043 and 5.2 ppm, compared to 23.1 ppm for susceptible variety AGS 2055):

Louisiana State Variety Trial FHB

		Severity (0-9)			FDK (%)			DON
	Classification	25	24	**Avg**	25	24	**Avg**	24
AGS 4043	Resistant	3.0	0.5	**1.8**	8	13	**10**	2.6
LA18-119	Resistant	2.5	0.8	**1.6**	9	13	**11**	2.9
AGS 3022	Mod-R	3.5	2.5	**3.0**	15	13	**14**	3.1
#CHAD	Mod-R	6.3	1.8	**4.0**	28	13	**20**	4.6
LA19-31	Mod-R	4.3	3.0	**3.6**	19	10	**14**	5.2
#TURBO	Mod-R	2.8	0.3	**1.5**	30	30	**30**	5.6
GoWheat 6000	Mod-S	2.3	1.5	**1.9**	18	30	**24**	8.6
AGS 2055	Susceptible		4.5			75		23.1

Disease and Pest Screening

Table 6: Field disease notes on Leaf Rust (LR), Stripe Rust (YR), and Bacteria Leaf Streak (BLS) at mutliple locations of the Uniform Southern in 2025. Locations are Quincy, FL (FLQ), Battle Ground, IN (INB), Baton Rouge, LA (LAB), Winnsboro, LA (LAW), Williamstown, GA (GAW), Champaign, IL (ILC), and Henderson, Kentucky (KYH). LA19-31 demonstrates strong Leaf and Stripe Rust resistance (essentially no presence of either in any environment), and moderate BLS response (2.1 out of 9 across two locations, compared to a mean of 1.9 and a maximum of 2.9):

Uniform Southern 2025 Disease Notes

	LR (0-9)					YR (0-9)	BLS (0-9)		
	FLQ	INB	LAB	LAW	**Avg**	GAW	ILC	KYH	**Avg**
Min	0.0	1.0	0.0	0.0	**0.3**	0.0	0.9	0.8	**1.0**
Mean	1.0	2.4	0.3	0.2	**1.0**	1.5	2.1	1.7	**1.9**
LA19-31	0.0	1.0	0.0	0.0	**0.3**	0.0	2.3	1.9	**2.1**
AGS 2000	0.0	5.0	0.5	0.0	**1.4**	8.0	1.9	2.5	**2.2**
Jamestown	0.0	3.0	0.0	0.0	**0.8**	0.0	2.2	2.3	**2.2**
Hilliard	0.0	3.0	0.0	0.0	**0.8**	0.0	3.5	2.3	**2.9**
Pioneer 26R41	5.0	8.0	0.0	4.0	**4.3**	0.0	2.1	1.7	**1.9**
Max	7.0	8.0	6.0	4.0	**4.3**	8.0	3.6	2.7	**2.9**

Table 7: Field disease notes on powdery mildew (PM) and Barley Yellow Dwarf Virus (BYDV) at multiple locations of the Uniform Southern in 2025. Locations are Raleigh, NC (NCR), Salisbury, NC (NCS), Blacksburg, VA (VAB), and Florence, SC (SCF). LA19-31 demonstrates strong powdery mildew resistance, with 0 disease pressure in Warsaw, Virginia, the location with the heaviest disease pressure. LA19-31 demonstrates moderate BYDV resistance, with a mean score of 1.4 relative to a multi-location mean of 1.9 and a maximum of 3.6:

Uniform Southern 2025 Disease Notes

	PM (0-9)				BYDV (0-9)					
	NCR	NCS	VAB	**Avg**	GAW	NCR	NCS	SCF	VAB	**Avg**
Min	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	0.0	1.5	**0.3**
Mean	0.2	0.2	1.8	**0.8**	1.4	0.9	0.9	1.7	4.5	**1.9**
LA19-31	0.5	0.5	0.0	**0.3**	1.0	0.0	0.0	2.0	4.0	**1.4**
AGS 2000	1.0	0.0	4.5	**1.8**	0.0	0.0	0.0	3.7	4.5	**2.0**
Jamestown	0.5	0.5	2.0	**1.0**	0.0	1.5	1.5	2.0	3.5	**1.7**
Hilliard	0.0	0.0	2.0	**0.7**	0.0	1.5	1.5	1.0	4.5	**1.7**
Pioneer 26R41	0.0	0.0	1.0	**0.3**	0.0	1.5	1.5	1.0	1.5	**1.1**
Max	1.5	1.0	4.5	**1.8**	7.0	2.5	3.0	4.3	8.0	**3.6**

Table 8: Stripe rust field notes in the 2024 GAWN. Locations are Plains, GA (GAP), Baton Rouge, LA (LAB), Winnsboro, LA (LAW), and McGregor, TX (TXM). LA19-31 demonstrates strong resistance to stripe rust at all locations:

GAWN 2024 Stripe Rust Notes

	YR (0-9)				
	GAP	LAB	LAW	TXM	**Avg**
Min	0.0	0.0	0.0	0.0	**0.0**
LA19-31	0.0	0.5	0.0	0.0	**0.1**
Hilliard	0.0	0.0	0.0	1.0	**0.3**
Pioneer 26R41	0.0	0.0	0.5	0.0	**0.1**
AGS 4043	0.5	5.0	3.5	8.0	**4.3**
Dyna-Gro 9332	0.5	0.0	1.5	3.0	**1.3**
Mean	1.5	2.3	2.2	4.0	**2.5**
Max	8.5	7.0	7.0	9.0	**7.8**

Table 9: Hessian fly screening nursery results from two headrow nurseries at Griffin and Plains GA conducted by the Georgia state variety trial. Post-harvest phenotypes are percent infested tillers (PIT %) and pupae-per-tiller (PPT). LA19-31 is compared to field resistant lines AGS 3022 and AGS 4043, and field susceptible lines #BINGO and Go Wheat 6000. LA19-31 shows moderate field resistance to Hessian fly in these tests, potentially due to the presence of the $7D$ Hessian fly field resistance QTL:

Georgia 2025 Hessian fly field screening

	Griffin		Plains		Average	
	PIT (%)	PPT	PIT (%)	PPT	**PIT (%)**	**PPT**
Min	0	0.0	0	0.0	**0**	**0.0**
AGS 3022	5	0.2	10	0.1	**8**	**0.1**
AGS 4043	10	0.2	0	0.0	**5**	**0.1**
LA19-31	20	0.3	0	0.0	**10**	**0.2**
Mean	21	0.6	5	0.1	**13**	**0.3**
#BINGO	60	5.1	0	0.0	**30**	**2.6**
Go Wheat 6000	60	2.0	30	0.5	**45**	**1.2**
Max	70	5.1	30	0.7	**45**	**2.6**

Table 10: Septoria nodurum blotch screening averages conducted at inoculated nurseries at Raleigh, NC and Plymouth, NC in 2025. Results for LA19-31 and other checks in the Uniform Southern test are given. LA19-31 demonstrates moderate resistance to both leaf and glume blotch:

2025 Uniform Southern SNB Screening

	Leaves (0-9)	Glumes (0-9)
Min	3.3	1.5
LA19-31	4.5	2.8
Hilliard	5.5	2.8
Pioneer 26R41	6.3	3.0
Mean	4.9	3.4
Jamestown	5.8	4.3
Max	7.0	7.0

Grain Quality Data

Test Weight (lb/bu) across locations in 2025 state yield trials

	S. LA	N. LA	TX	AL	SC	VA
Mean	54.0	54.7	57.7	51.8	56.6	56.4
LA19-31	55.2	54.8	57.8	52.0	56.7	57.7
Rank	10 of 23	19 of 37	16 of 35	15 of 29	24 of 49	22 of 124

Table 11: Soft wheat milling and baking quality phenotypes conducted on grain samples harvested from the 2024 GAWN trial grown at Plains, GA. Screened phenotypes include kernel protein percentage, kernel hardness, kernel diameter, kernel weight, adjusted flour yield, softness equivalent, flour protein at 14%, lactic acid percentage, sodicum carbonate percentage, cookie diameter, and top grade. Cookie diameter of flour milled from the LA19-31 sample is above-average for the GAWN test (19.7 cm vs 19.5 cm), outperforming comparable check varieties such as AGS 4043 and Dyna-Gro 9332. Kernel hardness and protein are appropriate for a soft red winter wheat, and flour yield is above-average (71.7% vs 69.8%):

USS 2025 Soft Wheat Quality Data

	Kernel Prot. (%)	SKCS Kern. Hard.	SKCS Kern. Diam.	SKCS Kern. Wght.	Adjstd Fl Yld (%)	Softness Equiv. (%)	Flour Prot. (14%)	L. Ac. (%)	Sodium Crbnt (%)	Cookie Diam. (cm)	Top Grade (0-9)
Hillard	8.6	-1.4	2.8	35.8	68.7	66.8	6.5	112.9	73.5	18.8	4
Pio 26R41	8.4	2.0	2.8	38.5	69.9	69.9	6.4	107.7	70.7	19.5	5
SS 8642	9.1	7.1	2.8	36.6	68.9	62.9	7.4	123.2	68.2	18.8	4
AGS 4043	8.8	4.0	2.8	32.8	69.5	64.3	6.7	109.1	69.6	19.5	5
D-Gro 9332	8.6	1.0	2.9	35.9	71.2	67.7	6.5	105.2	66.8	19.6	5
LA19-31	8.4	-1.9	2.9	35.6	**71.7**	69.2	6.4	107.8	70.0	**19.7**	5
Average	8.2	1.2	2.8	37.0	69.8	65.6	7.1	112.2	69.6	19.5	4

Regional Nursery Yield Trial Results

Table 12: Multi-location yield trial performance of LA19-31 in the 2024 GAWN and 2025 USS. Overall ranks are given, along with averages across Southern locations (TX, LA, AR, GA, and FL) and Mid-Atlantic locations (SC, NC, KY, and VA excluding Blacksburg). Generally strong performance of LA19-31 across regions in 2025 was balanced by very poor performance in a handful of locations (Greenville, TX; Brooksville, MS; Kinston, NC; Battle Ground, IN). Two of these locations, Greenville and Brooksville, correspond to poor performance of LA19-31 in the state yield trial grown at that same location:

Regional Yield Trial Results

	25 USS			24 GAWN		
	Overall	South	Mid-Atlantic	Overall	South	Mid-Atlantic
Max	87.1	76.0	88.3	64.6	71.9	83.3
LA19-31	81.1	71.2	80.2	64.3	68.9	78.9
Mean	77.4	63.8	77.6	55.1	56.2	71.9
Hilliard	77.3	64.6	77.6	56.2	58.9	71.0
Pioneer 26R41	69.9	48.1	74.1	55.8	58.6	70.3
Min	69.1	48.0	67.9	35.9	29.4	55.7
Rank	7 of 39	5 of 39	9 of 39	2 of 60	5 of 60	5 of 60

State Variety Yield Trial Results

Table 13: Two-year averages for both the Northern and Southern yield tests of the Louisiana state variety trial. The Northern trial contains two years of data from non-fungicide treated plots at both Alexandria and Winnsboro, while the Southern trial contains two years of data from plots at Baton Rouge, Jeanerette, and Crowley. Data on all varieties tested in both years is included. Note that this is a mean of all plots (25 total) BR has 6 reps in 2025 and 3 in 2024. Crowley and Jeanerette had 4 reps in both years. Ranking of LA19-31 does not change if the means of the two years are averaged with equal weight. LA19-31 performs second of 14 tested lines in southern Louisiana across two years, but poorly in northern Louisiana at 18th of 20 lines:

Two-Year Louisiana State Variety Trial Grain Yield (bu/acre)

	Southern Louisiana						Northern Louisiana					
	Two-Year	Rnk	2025	Rnk	2024	Rnk	Two-Year	Rnk	2025	Rnk	2024	Rnk
#CHAD	74.1	1	70.3	2	84.6	2	70.5	2	64.0	3	77.1	5
LA19-31	73.0	2	67.3	5	86.2	1	62.2	18	57.6	20	66.7	40
AGS 3022	72.5	3	68.4	4	81.5	5	65.0	12	57.3	22	72.7	22
LA13176CB-15-1-3	70.7	4	66.7	6	80.6	7	68.8	3	62.4	6	75.3	11
LA17006-LDH042	70.1	5	62.5	9	81.1	6	67.7	8	58.9	16	76.4	7
LA19333-NDH34	68.4	6	61.9	10	79.4	8	68.0	5	62.9	4	73.1	19
LA18-119	67.9	7	61.7	11	78.7	10	67.7	7	60.6	10	74.8	12
AGS 4043	66.0	8	71.8	1	63.4	31	64.7	14	59.7	12	69.8	35
GoWheat 6000	64.4	9	56.7	14	76.4	17	64.9	13	59.2	13	70.6	31
AGS 4023	63.8	10	55.1	16	75.7	18	63.7	15	56.1	24	71.2	30
AgriMAXX 492	63.3	11	59.2	13	71.1	22	72.1	1	59.0	15	85.2	1
LA15203-LDH197	59.3	12	43.9	20	78.4	11	61.8	19	54.6	27	68.9	36
Delta Grow 1900	48.5	13	33.8	22	67.5	27	56.4	21	37.4	36	75.4	10
USG 3354	41.2	14	22.7	23	63.5	30	68.3	4	62.7	5	72.0	27
AgriMAXX 543							67.8	6	64.3	2	70.1	33
#TURBO							67.6	9	60.7	8	72.2	26
#BUSTER							66.7	10	55.7	25	75.9	9
AgriMAXX 514							65.5	11	54.7	26	76.3	8
#BINGO							63.7	16	53.2	30	74.1	15
Delta Grow 1200							62.5	17	47.0	33	77.9	3
AgriMAXX 535							59.0	20	44.4	34	76.5	6
Mean	64.5	/14	57.1	/23	73.0	/35	65.4	/21	55.3	/38	71.2	/50
CV%	11.1		9.4		10.0		11.5		11.2		11.2	
LSD(0.10)	8.0		8.7		9.3		NS		7.1		NS	

Table 14: Two-year averages across all locations in the 2024 and 2025 Mississippi state yield trial, for all varieties tested in both years. LA19-31 was the sixth ranked of 26 total entries in 2025, and the fifth-ranked of 14 varieties tested across both years:

Two-Year Mississippi State Yield Trial

	Grain Yield (bu/acre)					
	Two-Year	**Rank**	**2025**	**Rank**	**2024**	**Rank**
LA15203-LDH197	70.5	1	70.9	2	70.1	3
#TURBO	69.7	2	68.1	7	71.2	1
LA19333-NDH34	69.5	3	71.0	1	67.9	18
LA18-119	69.3	4	69.8	4	68.8	12
LA19-31	68.1	5	68.9	6	67.4	25
#CHAD	68.0	6	65.9	9	70.0	4
#BINGO	65.8	7	61.9	17	69.8	5
AgriMAXX 514	65.8	8	62.5	16	69.1	10
#BUSTER	65.7	9	63.7	14	67.6	24
AgriMAXX 535	65.0	10	62.7	15	67.3	26
GoWheat 6000	62.5	11	61.5	18	64.3	41
USG 3354	61.2	12	52.8	24	69.6	7
USG 3352	61.1	13	53.7	23	68.6	14
GoWheat 6056	61.1	14	55.5	22	66.7	30
Mean	66.0	(of 14)	62.7	(of 26)	67.6	(of 41)

Table 15: Two-year averages across all locations in the 2024 and 2025 Alabama state yield trials that included LA19-31. All varieties tested in both years at the same locations as LA19-31 are included. LA19-31 was the fifth-ranked variety of 24 in 2024, 13^{th}-ranked in 2025 of 29, and third-ranked of eleven across two years:

Two-Year Alabama State Yield Trial

	Grain Yield (bu/acre)					
	Two-Year	**Rank**	**2025**	**Rank**	**24**	**Rank**
AgriMAXX 514	77.4	1	84.4	1	70.3	1
AgriMAXX 499	71.8	2	80.6	7	63.0	12
LA19-31	71.2	3	77.4	13	65.0	5
USG 3354	69.1	4	73.6	19	64.7	6
AGS 4043	68.2	5	77.8	11	58.7	21
LA15203-LDH197	68.1	6	74.8	16	61.3	15
Dyna-Gro 9393	68.1	6	72.8	22	63.3	10
LA19333-NDH34	67.2	8	73.8	18	60.7	17
LA18-119	65.8	9	74.6	17	57.0	22
Jamestown	62.5	10	71.4	26	53.7	24
GA Gore	61.8	11	66.2	29	57.0	22
Mean	68.3	(of 11)	76.1	(of 29)	62.4	(of 24)

Table 16: Multi-location grain yield averages for the Georgia state variety trial. The Northern Location includes the averages for Rome, Plains, and Griffin, while the Overall column includes those sites along with averages from Midville and Tifton. Top-ranking experimental lines and all commercial lines are included. Considering just the Northern locations, LA19-31 ranked sixth overall of 79 tested varieties, and second overall of 66 varieties when southern locations were included:

2025 Georgia State Yield Trial

	Grain Yield (bu/acre)			
	Overall	**Rank**	**Northern**	**Rank**
VA20FHB-20	93.3	1	98.5	1
LA19-31	87.0	2	93.1	6
GA17034ID-23LE29	85.6	4	93.4	5
SH 5550	85.1	5	90.6	8
AGS 2024	85.0	6	90.1	11
VA19FHB-36	84.9	7	95.7	4
Plantation	83.5	11	84.2	23
GA151450-22LE29	82.6	12	91.2	7
#BUSTER	79.5	21	86.3	19
AGS 3022	79.4	22	80.7	36
VT Pitman	78.4	24	79.4	44
AGS 3043	76.4	35	81.3	34
#CHAD	75.8	39	78.9	46
#TURBO	75.2	41	87.9	13
GoWheat 6000	74.9	42	77.6	54
Dyna-Gro 9623	74.7	43	78.0	51
Pio 26R820	71.8	51	75.4	64
USG 3354	71.8	52	75.3	65
AGS 4023	71.4	54	80.2	39
#BINGO	69.8	58	76.5	60
AGS 3026	64.5	63	67.9	73
Dyna-Gro 9533	51.5	66	52.5	79
Mean	76.2	(of 66)	80.3	(of 79)

Table 17: Two-year averages across all locations in the 2024 and 2025 South Carolina state yield trials. All varieties tested in both years are included. LA19-31 ranked ninth of 69 varieties in the 2024 test, eight of 49 in the 2025 test, and second of 27 varieties tested across both years. LA19-31 out-performed all commercial varieties tested across both years yielding 87.7 bu/acre on average compared to the 87.6 bu/acre of AGS 3022 and the 83.8 bu/acre of AGS 4043:

Two-Year South Carolina State Yield Trial

	Grain Yield (bu/acre)					
	Two-Year	**Rank**	**2025**	**Rank**	**2024**	**Rank**
VA19FHB-36	90.3	1	107.5	3	73.1	8
LA19-31	87.7	2	102.7	8	72.6	9
AGS 3022	87.6	3	98.1	26	77.0	2
AGS 2024	87.2	4	100.5	18	73.9	6
SCLA18WF0304-13	86.3	5	104.3	6	68.3	20
USG 3118	85.8	6	100.0	20	71.6	10
LA1933-NDH34	85.0	7	98.9	23	71.0	12
SH5123	84.9	8	102.6	9	67.2	27
SH7200	84.6	9	94.9	36	74.2	5
USG 3451	84.3	10	93.1	39	75.5	3
LA18-119	84.1	11	100.1	19	68.1	22
AGS 4043	83.8	12	92.3	42	75.3	4
Hilliard	83.7	13	102.2	10	65.2	34
LA15203-LDH197	83.5	14	97.2	31	69.8	15
SCLA18WF0512-11-1	83.3	15	102.0	12	64.6	37
USG 3673	82.7	16	98.1	26	67.3	26
SCLA19WF2110	82.7	17	96.1	33	69.2	17
15VTK-1-101	82.2	18	97.8	28	66.6	30
AM 516	82.0	19	104.7	5	59.3	55
USG 3472	81.3	20	101.8	15	60.8	51
SH7222	80.6	21	100.0	20	61.1	49
SCLA18WF0712-12	80.3	22	92.3	42	68.2	21
AM 535	78.4	23	98.3	25	58.4	57
AGS 4023	76.9	24	90.3	48	63.4	40
AM 543	72.1	25	91.4	46	52.8	63
SH4222	70.8	26	94.4	37	47.2	68
SH5550	69.1	27	92.6	41	45.5	69
Mean	82.2	(of 27)	98.5	(of 49)	64.7	(of 69)

Table 18: Multi-location grain yield averages for the 2025 Virginia state variety trial. The Coastal averages include location averages at Warsaw, Holland, Painter, and Blackstone, while the Inland averages include locaitons at Orange and Blacksburg. Due to the large size of the test, only the top three experimental lines, commercial lines above the 70th overall rank, and bottom commercial lines are included with LA19-31. LA19-31 performs similarly to parent AGS 4043 across all locations (yielding 91.9 bu/acre compared to 92.8 bu/acre), and yielding slightly higher when excluding the Blacksburg and Orange locations (87.1 bu/acre vs 85.8 bu/acre):

2025 Virginia State Yield Trial

	Grain Yield (bu/acre)					
	Overall	**Rank**	**Coastal**	**Rank**	**Inland**	**Rank**
18VTK10-23	103.6	1	101.3	1	108.1	32
VA20FHB-18	102.0	3	98.1	4	109.7	19
VA21W-112	99.6	6	95.1	6	108.5	29
SH 7222	97.8	9	92.2	12	109.1	26
Pitman	97.4	11	93.1	9	106.1	43
Hilliard	94.6	23	90.6	16	102.5	69
AGS 4043	92.8	29	85.8	37	104.5	61
Dyna-Gro 9632	92.5	30	85.8	36	106.0	45
LA19-31	91.9	36	87.1	31	101.4	80
USG 3463	91.4	38	86.3	33	101.6	78
Dyna-Gro 9393	90.8	43	83.8	42	104.6	58
AgriMAXX 557	90.7	45	80.7	56	110.7	15
USG 3475	89.9	51	81.2	55	107.3	36
USG 3673	89.7	53	82.5	46	103.7	65
SH 5123	89.6	54	82.0	49	104.8	56
USG 3354	89.2	56	76.1	84	109.6	21
Dyna-Gro 9290	88.2	63	83.1	44	98.4	101
SH 5902	88.0	65	77.1	75	109.6	18
Dyna-Gro 9593	87.7	69	79.4	65	104.4	63
USG 3363	87.6	70	76.3	82	110.1	17
Pio 26R590	74.8	118	64.9	116	96.8	109
Massey	66.5	123	61.1	121	76.1	123
AGS 3026	63.4	125	58.0	123	74.1	124
Mean	88.1	(of 124)	79.9	(of 124)	103.4	(of 124)

Table 19: Multi-location averages and individual location-specific yield averages for the Texas state soft red winter wheat trial. The top experimental lines and commercial varieties are included. LA19-31 has a similar multi-location average performance to commercial varieties Dyna-Gro 9332 and USG 3354. The overall average of LA19-31 in the state test is affected by a very poor performance at the Greenville location.

2025 Texas State Soft Wheat Variety Trial

	Overall	Rank	Ennis	Greenville	Hillsboro	McGregor	Muenster	Temple
AGS 3022	64.4	1	74.9	68.9	60.8	78.9	62.4	40.5
Blackland 2344	63.1	2	72.1	70.6	53.6	76.0	66.3	40.0
LA17006-LDH049	62.3	4	68.0	64.8	58.8	72.0	63.7	46.3
Dyna-Gro 9332	60.8	5	67.2	70.9	51.6	72.3	66.6	36.5
LA19-31	60.2	6	60.4	57.6	56.0	70.7	64.6	46.0
USG 3354	59.5	7	70.2	71.5	46.5	70.3	60.0	38.7
GoWheat 6000	57.1	14	61.3	64.2	45.5	63.9	65.8	41.7
Dyna-Gro 9393	56.3	16	63.6	66.9	44.9	64.4	60.4	37.8
Progeny #Buster	55.9	17	72.2	71.3	39.0	67.4	56.1	29.6
USG 3884	55.9	17	60.5	70.2	43.8	63.8	60.4	36.8
Progeny #Turbo	55.9	17	65.0	67.6	43.9	66.8	61.3	30.8
Blackland 2167	54.5	23	68.6	65.0	42.2	62.5	64.9	24.1
Dyna-Gro 9593	54.4	24	60.2	73.7	43.1	58.3	60.6	30.6
USG 3783	53.3	27	63.3	66.4	46.7	63.5	57.2	22.8
AGS 4023	52.4	29	61.1	61.1	47.5	62.5	55.1	27.5
Blue River 822	50.1	32	61.3	66.3	42.1	63.7	39.5	27.8
Dyna-Gro 9151	50.0	33	50.3	70.3	31.3	45.1	63.0	40.0
Dyna-Gro 9172	49.3	34	68.7	68.0	28.8	50.0	55.2	25.2
Dyna-Gro 9422	44.1	35	48.7	65.0	24.2	45.5	51.5	30.1
USG 3755	44.0	36	51.5	66.8	22.6	48.0	48.7	26.4
LSD (0.05)	2.8		4.2	7.0	7.1	8.0	8.6	10.1
CV (%)	7.8		4.2	6.5	9.9	6.4	9.4	14.9
Mean	55.6		62.2	66.2	44.3	64.2	56.0	35.0

Alex Gilreath

From: DeWitt, Noah <NDeWitt@agcenter.lsu.edu>
Sent: Thursday, February 26, 2026 11:44 AM
To: Alex Gilreath
Subject: Re: Wheat variety LA19333-NDH31

Yeah, it was approved by the LSU release committee based on this document and sent out for bid. What additional information would be useful? Sorry if this isn't helpful -- this is the first time I have gone through this process, so I'm not sure what the standard documentation involves. I should also be able to get the text of the email that was sent out from the AgCenter to seed companies to initiate the bid process if that would be helpful.

Noah

From: Alex Gilreath <alex.gilreath@GEORGIACROP.COM>
Sent: Thursday, February 26, 2026 10:35 AM
To: DeWitt, Noah <NDeWitt@agcenter.lsu.edu>
Subject: RE: Wheat variety LA19333-NDH31

EXTERNAL EMAIL: Evaluate.

The release committee did approve of this variety? Any supporting documentation would be helpful. I really appreciate it.

Regards,

Alex Gilreath
Certification Program Associate

Georgia Crop Improvement Association

2425 South Milledge Avenue
Athens, Georgia 30605
706-542-2351
www.georgiacrop.com

From: DeWitt, Noah <NDeWitt@agcenter.lsu.edu>
Sent: Thursday, February 26, 2026 11:29 AM
To: Alex Gilreath <alex.gilreath@GEORGIACROP.COM>; Harrison, Stephen A. <SHarrison@agcenter.lsu.edu>
Subject: Re: Wheat variety LA19333-NDH31

Hi Alex,

Please see attached document on LA19-31. This was what was sent to the LSU release committee prior to release.