

**ATTACHMENT I**

**APPLICATION FOR APPROVAL OF X CULTIVARS    ASSOCIATE CULTIVARS**

**(Please check appropriate type of application)**

**1. Crop: Wheat**

**2. Experimental no. or name: GA 981622-5E35**

**3. Pedigree and history: GA 981622-5E35 is AGS 2000 / PIO 26R61. The final cross was made in the spring of 1998. Individual spike selections were made in the F2 to F5 generations at Plains, GA. The pedigree method of breeding was used to advance the segregating populations. In 2003, a headrow in the F5 generation was harvested for preliminary evaluations in 2004. Agronomic evaluations were conducted from 2004-2006 in nursery trials and from 2007 to 2008 in the Georgia's Small Grain State Performance Trials. It was evaluated in 2007 in the Uniform Southern Wheat Nursery.**

**Breeder seed: A small increase plot (5x10') of GA 981622-5E35 was planted from seed which originated from remnant seed of a headrow in F6 generation and was rogued thoroughly for aberrant types. The seed from this small plot was used to plant increase strips in 2007 at Plains, GA. Seed from the strips was planted in a ten acre field in 2008 at the Foundation Seed Farm in Plains and rogued to remove variants.**

**4. Description: GA 981622-5E35 is a high-yielding, medium maturing, and good test weight soft red winter wheat line. Its maturity averages similar to AGS 2000 in Georgia. It has field resistance to current biotypes of Hessian fly in Georgia and is resistant to races of leaf rust and stripe rust in Georgia and the Southeast.**

**5. Station(s) where developed: Griffin Campus**

**6. Participating scientist(s): Jerry Johnson, G. David Buntin, and James Buck**

**7. In what respect is the new cultivar superior to the cultivar now in use? or reasons for proposing release as an associate cultivar.**

**GA 981622-5E35 will be released as a Cultivar due to its good yield performance in Georgia's Trials (Tables 1, 2, 4, 5, 6, 7, 8, 9, and 10), especially in South Georgia and its better stripe rust resistance than AGS 2000 (Tables 3 and 11).**

**It is equal to PIO26R61 for stripe rust resistance (Table 3 and 11) and is higher yielding than PIO 26R61 (Table 1, 4, 5, 6, 7, 8, 9, and 10).**

**It has field resistance to current biotypes of Hessian fly in Georgia which is equal to AGS 2000 and PIO 26R61 (Table 12).**

**8. Method of propagation: Seed**

**9. Amount of breeder seed stocks available (if applicable): 20 bu.**

**10. Amount of foundation seed stocks available (if applicable): 1000 bushel in summer of 2008.**

**11. Amount of cutting or bud material available for vegetative propagated material for nursery distribution (if applicable):**

**12. Is there likely to be unusual difficulty encountered in the production of any class of seed stocks? Explain. No**

**13. Three suggested names for the cultivar: GA 981622-5E35**

**14. Name approved by plant cultivar and germplasm release committee: GA 981622-5E35**

**15. Form of intellectual property protection: Plant Variety Protection**

**16. Is a royalty assessment recommended:  Yes  No**

**Table 1. Average Performance of GA 981622-5E35 and Checks in Elite Nursery Multilocations\* (5 Loc), 2005.**

Entry	Yield bu/A	Test Wt. lbs/bu	Head Date Julian	Height inches
GA 981622-5E35	97a	57ab	95a	38b
AGS 2000	83b	56b	96a	38b
PIO 26R61	87b	58a	98a	41a

\* Plains, Griffin, Calhoun, GA; Quincy, FL; Belle Mina, AL  
Numbers with same letters are not significantly different at the P0.05.

**Table 2. Average Performance of GA 981622-5E35 and Checks in Multi-State\* Performance Trials (5 Loc., GAWN), 2006.**

Entry	Yield bu/A	Test Wt. lbs/bu	Head Date Julian	Height inches
GA 981622-5E35	98a	60a	102a	35a
AGS 2000	92b	60a	102a	33a
USG 3209	88b	59a	103a	31a
Coker 9553	86b	60a	100b	33a

\*Florida, Georgia, Arkansas, Louisiana, Virginia  
Numbers with same letters are not significantly different at the P0.05.

**Table 3. Average Agronomic Traits of GA 981622-5E35 and Checks in Multi-State\* Performance Trials (5 Loc., GAWN), 2006.**

Entry	Lodging 0-9	P. Mildew 0-9	Leaf Rust 0-9	Stripe Rust 0-9
GA 981622-5E35	0.1b	1.0a	1.4b	0.0c
AGS 2000	3.4a	1.0a	5.1a	6.0a
USG 3209	2.8a	2.0a	5.9a	2.0b
Coker 9553	2.1a	2.5a	2.7b	0.0c

\*Florida, Georgia, Arkansas, Louisiana, Virginia  
Scale: 0 resistant and 9 susceptible  
Numbers with same letters are not significantly different at the P0.05.

**Table 4. Average Performance of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, 2-Yr Ave, 2006-2007 (8Yr-Loc).**

Entry	Yield bu/A	Test Wt. lbs/bu	Head Date Julian	Height inches
GA 981622-5E35	88a	62a	90b	40a
AGS 2000	76b	60a	92b	38a
PIO 26R61	77b	61a	92b	39a
AGS 2031	79b	61a	98a	39a

Numbers with same letters are not significantly different at the P0.10.

**Table 5. Average Performance of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, 2-Yr Ave, 2007-2008 (8Yr-Loc).**

Entry	Yield bu/A	Test Wt. lbs/bu	Head Date Julian	Height inches
GA 981622-5E35	87a	62a	99b	40b
AGS 2020	87a	61a	99b	38b
PIO 26R61	77b	62a	101b	43a
AGS 2031	75b	61a	104a	38b

Numbers with same letters are not significantly different at the P0.10.

**Table 6. Average Performance (grain yield) of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, in 2007-2008 (8Yr-Loc).**

Entry	South Bu/A	North Bu/A	Statewide Bu/A
GA 981622-5E35	86.7a	90.2a	88.5a
AGS 2020	86.7a	91.4a	88.4a
PIO 26R61	77.2b	84.4a	80.8b
AGS 2031	75.2b	94.1a	79.7b

Numbers with same letters are not significantly different at the P0.10.

**Table 7. Average Performance (grain yield) of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, in 2006 (5 Loc).**

Entry	South Bu/A	North Bu/A	Statewide Bu/A
GA 981622-5E35	87.9	100.8	93.1
GA 981621-5E34	84.3	107.8	93.7
AGS 2000	71.3	107.9	85.9
PIO 26R61	76.3	91.7	82.4
AGS 2031	81.4	97.1	87.7
Coker 9553	78.7	97.8	86.3
LSD at 10% level	4.4	8.8	4.4

**Table 8. Average Performance (grain yield) of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, in 2007 (3 Loc)**

Entry	South Bu/A	North Bu/A
GA 981622-5E35	89.0	Freeze damage
GA 981621-5E34	82.2	Freeze damage
AGS 2000	80.2	Freeze damage
PIO 26R61	78.4	Freeze damage
AGS 2031	77.0	Freeze damage
Coker 9553	73.2	Freeze damage
LSD at 10% level	4.8	

**Table 9. Average Performance (grain yield) of GA 981622-5E35 and Checks in Georgia's State Performance Trials in Georgia, in 2008 (5 Loc).**

Entry	South Bu/A	North Bu/A	Statewide Bu/A
GA 981622-5E35	84.4	79.5	82.5
GA 981621-5E34	79.2	90.2	83.6
AGS 2020	80.1	78.5	79.5
PIO 26R61	76.0	77.2	76.4
AGS 2031	73.5	91.2	80.6
Coker 9553	73.3	85.7	78.3
LSD at 10% level	4.0	10.2	4.7

**Table 10. Average Performance of GA 981622-5E35 and Checks in Uniform Southern Soft Red Winter Nursery, 2007.**

Entry	Yield bu/A	Test Wt. lbs/bu	Head Date Julian	Height inches
GA 981622-5E35	60.5a	59ab	110b	34a
AGS 2000	61.7a	59ab	108b	33a
PIO 26R61	56.1b	60a	110b	33a
USG 3209	57.4b	58b	109b	30b
McCormick	55.2b	59ab	113a	30b

21 locations in the Southern Region

Numbers with same letters are not significantly different at the P0.05.

**Table 11. Average Agronomic Traits of GA 981622-5E35 and Checks in Uniform Southern Soft Red Winter Nursery, 2007.**

Entry	Leaf Rust	Stripe Rust	P. Mildew
	0-9	0-9	0-9
GA 981622-5E35	0.6c	1.0b	1.3a
AGS 2000	1.2bc	5.0a	1.2a
PIO 26R61	1.9bc	0.0b	1.5a
USG 3209	3.0b	4.0a	0.7a
McCormick	5.9a	0.0b	0.0a

21 locations in the Southern Region

Scale: 0 resistant and 9 susceptible


Numbers with same letters are not significantly different at the P0.05.

**Table 12. Evaluation of lines in the field to Hessian fly as % fly infestation at Plains and Griffin, GA in 2007 and 2008.**

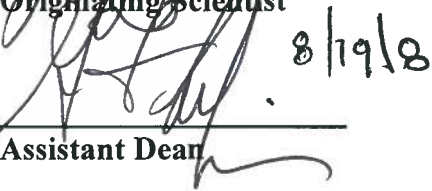
Entry	2007	2007	2008	2008
	Plains	Griffin	Plains	Griffin
GA 981622-5E35	0.0b	1.7b	0.6b	5.0b
AGS 2000	1.7b	8.3b	11.6b	2.5b
PIO 26R61	5.0b	0.0b	0.0b	0.0b
Chesapeake	61.7a	36.7a	26.3a	22.5a

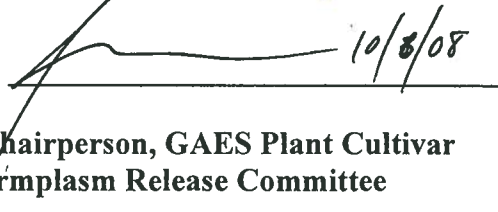
Numbers with same letters are not significantly different at the P0.01.


RECOMMENDED BY:

A.   
Originating Scientist

B.   
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C.  8/19/08  
Assistant Dean

D.  10/8/08  
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E.   
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APPROVED:

  
Dean and Director  
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