

No.

200200260



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Virginia Tech Intellectual Properties, Inc.

Whereas THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'38247'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twenty sixth day of November, in the year two thousand two.

Attest:



P. C. M. Jones

*Commissioner
Plant Variety Protection Office
Agricultural Marketing Service*

Secretary of Agriculture

W. F. Rehg

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
 (Instructions and information collection burden statement on reverse)

1. NAME OF OWNER

Virginia Tech Intellectual Properties, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME

VA96W-247

3. VARIETY NAME

38247

4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)

1872 Pratt Drive
 Suite 1625
 Blacksburg, VA 24060

5. TELEPHONE (include area code)

540-951-9378

6. FAX (include area code)

540-951-5292

9. DATE OF INCORPORATION

June 20, 1985

FOR OFFICIAL USE ONLY

PVPO NUMBER

200200260

FILING DATE

September 16, 2002

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.)

Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

Virginia

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)

Carl A. Griffey
 Crop and Soil Environmental Sciences
 Virginia Tech
 Blacksburg, VA 24061-0404

FILING AND EXAMINATION FEES:

\$ 2705.00

DATE 9/16/2002

CERTIFICATION FEE:

\$ 320.00

DATE 9/20/02

11. TELEPHONE (include area code)

540-231-9789

12. FAX (include area code)

540-231-3431

13. E-MAIL

Cgriffey@vt.edu

14. CROP KIND (Common Name)

Wheat, Common

15. GENUS AND SPECIES NAME OF CROP

Triticum aestivum

16. FAMILY NAME (Botanical)

Triticeae

17. IS THE VARIETY A FIRST GENERATION HYBRID?

YES NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. Exhibit A. Origin and Breeding History of the Variety
- b. Exhibit B. Statement of Distinctness
- c. Exhibit C. Objective Description of Variety
- d. Exhibit D. Additional Description of the Variety (Optional)
- e. Exhibit E. Statement of the Basis of the Owner's Ownership
- f. Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)
- g. Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? See Section 83(a) of the Plant Variety Protection Act

- YES (If "yes", answer items 20 and 21 below)
- NO (If "no", go to item 22)

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?

- YES NO
- IF YES, WHICH CLASSES? FOUNDATION REGISTERED CERTIFIED

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

- YES NO
- IF YES, SPECIFY THE FOUNDATION REGISTERED CERTIFIED NUMBER 1,2,3, etc.

(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?

- YES NO

IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)?

- YES NO

IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER

Michael J. Martin

NAME (Please print or type)

Michael J. Martin

SIGNATURE OF OWNER

NAME (Please print or type)

9/13/02

CAPACITY OR TITLE

Executive Vice President

DATE

CAPACITY OR TITLE

DATE

18A. Exhibit A: Origin and Breeding History

Genealogy and Breeding Method. Wheat variety 38247, formerly designated VA96W-247, was derived from the cross 'Coker 9803'/'Freedom'. The cross was made in spring 1990, and the F₁ generation was grown in the field as a single 4ft headrow in 1991 to produce F₂ seed. The population was advanced from the F₂ to F₄ generation using a modified bulk breeding method.

Population Advancement and Selection of the Variety. Wheat spikes were selected from the population in each segregating generation (F₂-F₃) on the basis of absence of obvious disease, early maturity, short straw and desirable head shape and size. Selected spikes were threshed in bulk, and the seed was planted in a 225ft² block in the fall of each year. Spikes selected from the F₄ bulk were threshed individually and planted in separate 4ft headrows. The wheat line VA96W-247 was derived as a bulk of one of these F₅ headrows selected in 1995 on the basis of short plant height and resistance to prevalent diseases such as powdery mildew (*Blumeria graminis*) and leaf rust (*Puccinia triticina*). The line was tested as entry 247 in non-replicated observation tests in 1996 and was designated VA96W-247. This line was tested in replicated preliminary tests in 1997 and in the Virginia Variety Trials from 1998-2000. Variety 38247 also was evaluated in the 1998-99 and 1999-2000 USDA-ARS Uniform Eastern Soft Red Winter Wheat Nursery.

Multiplication and Purification. The initial Breeder seed of variety 38247 was developed via removal of visual variants from a 0.12 acre F₈ purification block. While variety 38247 has remained stable and uniform in composition through the last three generations of self pollination, the initial Breeder seed of variety 38247 contained up to 0.25% taller plants, 0.10% plants with longer or shorter awns, 0.10% plants with lax spikes, and 0.10% plants with purple stem color at ripening. In the fall of 1999, 235 F₁₀ headrows of variety 38247 were planted to develop a purer source of Breeder seed. These rows were evaluated for uniformity and trueness of type several times during the 2000 season. Of the 235 rows, 45 variant rows were removed, and the remaining rows were harvested and threshed individually. Seed from these rows was planted in plots in fall 2000, and will be evaluated for uniformity and trueness of type during the 2001 season. Variant plots will be removed and the remaining plots will be harvested in bulk to provide a new source of Breeder seed.

18B. Exhibit B: Novelty Statement

Wheat variety 38247 is uniquely different from all known cultivars, but is most similar to its parent Coker 9803. Based on seedling tests conducted by the USDA-ARS Cereal Disease Lab, St. Paul, MN, variety 38247 has gene *Lr26* governing resistance to leaf rust (*Puccinia triticina*), while Coker 9803 has gene *Lr18*. Variety 38247 is susceptible to leaf rust races MCDL (virulence for genes *Lr1,3, 10, 17, 26*), MCGL (*Lr1, 3, 10, 11, 26*) and TFBL (*Lr1, 2a, 2c, 3, 10, 24, 26*), while Coker 9803 is resistant to these races. Variety 38247 is resistant to races, such as TLGQ (*Lr1, 2a, 2c, 3, 9, 10, 11, 18*), while Coker 9803 is susceptible. Variety 38247 and Coker 9803 differ in reaction to powdery mildew (*Blumeria graminis*) and, therefore, differ for one or more resistance genes. Tests conducted at Virginia Tech indicate that variety 38247 has gene *Pm8*, which Coker 9803 does not possess. In seedling tests conducted in 1996 and 1998, variety 38247 was susceptible (score of 3 on a 0=Resistant to 4=Susceptible scale), to mildew isolates with virulence for gene *Pm8*, while Coker 9803 was resistant to moderately resistant (scores of 1-2). At the Booting Stage, flag leaves of variety 38247 are recurved, while those of Coker 9803 are erect. Glumes of variety 38247 have obtuse beaks, while those of Coker 9803 are acute.

Variety 38247 also is similar to one of its sister lines released as variety Sisson. However, head emergence of variety 38247 is consistently later than that of Sisson and on average variety 38247 heads 2 days later than Sisson. In tests conducted from 1997-2000, head emergence of variety 38247 was 1-3 days later than Sisson with an L.S.D. (0.05) value of 1 day in each test (Tables 1-4). At the Booting Stage, flag leaves of variety 38247 are recurved and non-twisted while those of Sisson are erect and twisted. Variety 38247 has a strap head shape, while Sisson has a tapering head shape.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK AND SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Virginia Tech Intellectual Properties, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

1872 Pratt Dr., Suite 1625
Blacksburg, VA 24060

FOR OFFICIAL USE ONLY

PVPO NUMBER

200200260

VARIETY NAME OR TEMPORARY DESIGNATION

38247

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (e.g., 089 or 09) when number is either 99 or less or 9 or less.

1. KIND:

1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

1 = SPRING 2 = WINTER 3 = OTHER (Specify) _____ 1 = SOFT 3 = OTHER (Specify) _____
2 = HARD

1 = WHITE 2 = RED 3 = OTHER (Specify) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

FIRST FLOWERING LAST FLOWERING

4. MATURITY (50% Flowering):

NO. OF DAYS EARLIER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS 7=FFR555W
 NO. OF DAYS LATER THAN 4 = LEMHI 5 = NUGAINES 6 = LEEDS 8=Pioneer2580

5. PLANT HEIGHT (From soil level to top of head):

CM. HIGH
 CM. TALLER THAN 1 = ARTHUR 2 = SCOUT 3 = CHRIS 7=Coker9803
 CM. SHORTER THAN 4 = LEMHI 5 = NUGAINES 6 = LEEDS 8=Pioneer2580

6. PLANT COLOR AT BOOTING (See reverse):

1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHOR COLOR:

1 = YELLOW 2 = PURPLE

8. STEM:

Anthocyanin: 1 = ABSENT 2 = PRESENT Waxy bloom: 1 = ABSENT 2 = PRESENT
 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT Internodes: 1 = HOLLOW 2 = SOLID
 NO. OF NODES (Originating from node above ground) CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

Anthocyanin: 1 = ABSENT 2 = PRESENT Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

Flag leaf at booting stage: 1 = ERECT 2 = RECURVED Flag leaf: 1 = NOT TWISTED 2 = TWISTED
3 = OTHER (Specify): _____
 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
 MM. LEAF WIDTH (First leaf below flag leaf) CM. LEAF LENGTH (First leaf below flag leaf):

4

11. HEAD:

3 Density: 1 = LAX 2 = DENSE 3. Mid-dense 2 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

3 Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

2 Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

0 9 CM. LENGTH 1 7 MM. WIDTH

12. GLUMES AT MATURITY:

3 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) 3 Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

2 Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE 1 Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

1 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

1 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

2 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

1 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL 1 Check: 1 = ROUNDED 2 = ANGULAR

2 Brush: 1 = SHORT 2 = MEDIUM 3 = LONG 1 Brush: 1 = NOT COLLARED 2 = COLLARED

2 Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

3 Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

0 7 MM. LENGTH 0 4 MM. WIDTH 2 7 GM. PER 1000 SEEDS

17. SEED CREASE:

1 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

2 Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

2 STEM RUST *See (Races) below 2 LEAF RUST Has gene (Races) Lr26 1 STRIPE RUST (Races) _____ 0 LOOSE SMUT

2 POWDERY MILDEW 0 BUNT OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

0 SAWFLY 2 APHID (Bydv.) 0 GREEN BUG 1 CEREAL LEAF BEETLE

1 OTHER (Specify) Hessian Fly HESSIAN FLY RACES: 1 GP 0 A 1 B 1 C 1 D 1 E 0 F 0 G

*Stem Rust Races: TPMK, RTRO, RTOO, RTHJ, RHMS, OKCS

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering		Seed size	
Leaf size		Seed shape	
Leaf color		Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

38247 Wheat

18D. Exhibit D: Additional Description of Variety 38247.

Variety 38247 is a mid-full season, high-yielding, short-stature, awnleted, soft red winter wheat with broad adaptation. Head emergence is one day earlier than that of Roane and Foster and two days later than Sisson. Plant height of variety 38247 (36 inches) is one inch higher than that of Sisson and one inch shorter than Pioneer 2580 (Tables 1-4). Straw strength of variety 38247 is moderately good and better than that of Jackson. Grain yields of variety 38247 have been similar or exceeded those of the best check cultivars. Average test weight of variety 38247 (58.5 lb/bu) has been consistently higher than that of Pioneer 2580 (57.7 lb/bu). Based on limited data from the 1999 Uniform Eastern Soft Red Winter Wheat Nursery (99UESRWWN), winter-hardiness (0 = poor to 9 = excellent) of variety 38247 is moderately good (7.5) and most similar to that of Foster (7.9) and Pioneer 2548 (8.1). Milling quality (Tables 8-10) of variety 38247 is most similar to that of Pioneer 2580 and Coker 9663, while baking quality tends to be better than that of these cultivars.

Variety 38247 is resistant to moderately resistant to powdery mildew (Tables 1-4). In seedling tests (99UESRWWN) for mildew resistance, this line was resistant to seven isolates, moderately resistant to eight, and moderately susceptible to two isolates of *Blumeria graminis*. In the field, variety 38247 is moderately susceptible to leaf rust, but did express resistance to six of nine races in seedling tests. This line is resistant to stem rust and expressed resistance to all six races tested. Variety 38247 is moderately resistant to barley yellow dwarf virus. This line has been rated as moderately resistant to moderately susceptible to wheat spindle streak and soil borne mosaic viruses and to leaf and glume blotch. It is susceptible to Hessian fly. Variety 38247 has expressed tolerance to acid soil regimes (1999 and 2000 UESRWWN).

Table 1. Summary of performance of VA96W-247 in the Virginia Tech Wheat Test, 2000 harvest.*

Brand/Variety	Yield (Bu/A)	Test Weight (Lb)	Date Headed (Mar 31+)	Height (In)	Lodging** (0.2-10)	Powdery	Leaf	Barley
						Mildew	Rust	Yellow Dwarf
	(7)	(6)	(4)	(3)	(5)	(2)	(2)◇	(2)
PIONEER 2580	76	56.1 -	28 -	38	0.3 -	0	3	2
JACKSON	74	57.7+	32 +	39	1.7+	1	5 +	2
COKER 9835	70 -	56.2 -	30	35	0.4	1	4	2
FFR 555W	63 -	55.3 -	33 +	38	0.3 -	5	6 +	4 +
VA96-54-326	75	58.2+	29 -	39	0.8	0	4	2
VA96W-247	80 +	57.4+	31 +	37	1.4	0	6 +	2
VA96W-250	82 +	57.7+	29 -	36	1.1	0	7 +	2
VA96W-158	79 +	56.8	26 -	40	0.9	1	2	2
VA96W-270	75	57.5+	28 -	40	0.4	1	6 +	2
Test Average	75	56.9	30	38	1.0	1	3	2
L.S.D. (0.05)	3	0.5	1	—	0.7	1	2	1
C.V.	8	1.5	3	3	102.7	87	49	25

* Varieties are ordered by descending statewide averages. A plus or minus sign indicates a performance significantly above or below the test average. The number in parentheses below column headings indicates the number of locations on which data are based.

** Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

◇The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

Table 2. Summary of performance of VA96W-247 in the Virginia Tech Wheat Test, 1999 harvest.*

Brand/Variety	Yield (Bu/A)	Test Weight (Lb)	Date Headed (Mar 31+)	Height (In)	Lodg- ing** (0.2-10)	Powdery Mildew	Leaf Rust (0-9) [†]	Barley Yellow Dwarf	
								Septoria	(2)
	(6)	(6)	(3)	(3)	(2)	(2)	(3)	(2)	(2)
PIONEER 2580	77	57.6	33	37	0.7	2	4	3	2
JACKSON	83	59.3	37	40	2.9	3	4	2	2
COKER 9835	78	57.5	35	35	3.0	2	7	2	2
FFR 555W	69	57.7	40	37	0.6	5	5	2	4
VA96-54-326	77	59.3	34	38	1.4	1	3	2	1
VA96W-247	80	58.2	38	35	1.8	1	1	3	3
VA96W-250	84	58.4	36	36	2.6	2	2	2	2
VA96W-158	84	58.3	32	38	1.9	1	4	4	3
VA96W-270	68	57.6	35	38	0.5	1	3	2	1
Average	75	58.1	36	38	1.3	2	3	3	2
LSD (0.05)	4	0.4	1	1	1.0	1	1	1	1

* The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average, respectively.

** Belgian Lodging Scale = Area x Intensity x 0.2. Area = 1-10, where 1 is wheat unaffected and 10 is entire plot affected and Intensity = 1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

† The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

Table 3. Summary of performance of VA96W-247 in the Virginia Tech Wheat Test, 1998 harvest.*

Brand/Variety	Test		Date		Lodging♣ (0.2-10) (6)	Powdery	Leaf	Head	Spring
	Yield (Bu/A) (7)	Weight (Lb) (7)	Headed (Mar 31+) (4)	Height (In) (3)		Mildew (0-9)□ (1)	Rust (0-9) (1)	Disease★ (0-9) (1)	Freeze Injury (%) (1)
PIONEER BRAND 2580	76 +	54.7	25 -	38	1.1 -	1 -	6	5	1
JACKSON	73	56.1 +	28 +	38	4.7 +	4 +	6	4 -	2
FFR 555W	73	54.7	29 +	39 +	0.8 -	7 +	8 +	5	1
NK-COKER 9835	69	53.6 -	28 +	35 -	1.8	4 +	6	5	1
VA96-54-326	74 +	56.6 +	25 -	37 -	3.3 +	1 -	8 +	5	3
VA96W-247	80 +	55.6 +	27	37 -	2.8	2 -	4	3 -	1
VA96W-250	80 +	55.8 +	26 -	34 -	3.6 +	1 -	4	4 -	2
NK-COKER 9803	66 -	55.8 +	25 -	35 -	3.9 +	6 +	5	6 +	3
LSD (0.05)	3	0.6	1	1	0.8	1	2	1	6
Test Average	71	54.9	27	38	2.5	3	5	5	5

* Varieties are ordered by descending statewide averages. The number in parentheses below column headings indicates the number of locations on which data are based. A plus or minus sign indicates a performance significantly above or below the test average.

♣ Belgian Lodging Scale = Area X Intensity X 0.2. Area = 1-10, where 1 is wheat is unaffected and 10 is entire plot affected and Intensity=1-5, where 1 is wheat standing upright and 5 is wheat lying totally flat.

□ The 0-9 ratings indicate relative disease intensity where 0=none and 9=total plant infection.

★ This was most likely bacterial pseudomonas although there may have been septoria nodorum present.

Table 4. Summary of performance of VA96W-247 in the 1996-97 Virginia/North Carolina Preliminary Wheat Test.

Line	Yield (Bu/A)	Test Weight (lbs./Bu)	Date Headed (Mar 31+)	Height (in.)	Powdery		Leaf		WSSMV ² (0-9)	BYDV ⁴ (0-9)	Septoria (0-9)
					Mildew (0-9) ²	Rust (0-9)	Rust (0-9)	Rust (0-9)			
Pioneer 2580	84	59.1	45	36	1	3	5	3	3	2	2
Jackson	82	60.1	48	38	2	4	3	2	2	2	2
Coker 9835	77	58.2	48	33	2	2	2	3	3	3	3
Coker 9803	74	60.5	43	35	1	2	2	3	3	2	2
FFR555W	75	58.6	50	36	4	4	2	3	3	3	3
VA96W-247	87	59.7	46	36	0	3	2	3	3	2	2
VA96W-250	96	60.1	43	35	0	4	2	1	1	2	2
VA96W-158	86	59.1	41	39	1	2	1	3	3	3	3
VA96W-270	78	59.8	43	38	0	4	0	2	2	3	3
LSD (0.05) ⁵	6	0.4	1	1	1	1	2	1	1	1	1
Test Average	77	59.0	46	36	1	3	2	3	3	3	3

¹ The number in parentheses indicates the number of locations upon which the data are based. The test was conducted at Blacksburg, Warsaw, and Painter, VA, and Kinston and Plymouth, NC.

² All 0-9 ratings indicate relative disease severity: 0 = no disease present; 9 = total infestation of the plant by the disease.

³ Wheat spindle streak mosaic virus.

⁴ Barley yellow dwarf virus.

⁵ Overall LSD values for all 96 entries in the test.

Table 8. Milling and baking quality of VA96W-247 wheat: 1998 crop

Entry	Milling quality score	Baking quality score	Adj. flour yield %	Protein %	AWRC %	Softness equiv.
Massey (standard)	100.0	100.0	73.6	10.1	54.4	55.0
FFR555W-B	101.8	100.9	74.2	9.1	53.7	54.7
Pioneer 2580-B	94.6	98.8	72.0**	8.6	55.3	55.2
Jackson	95.8	97.3	72.3*	9.7	56.7	56.0
Coker 9835-D	96.2	100.2	72.5*	8.7	57.3*	60.4
Coker 9663	97.1	87.7	72.7	9.6	57.2	48.7
VA96-54-326	99.8	97.1	73.6	10.0	55.5	54.1
VA96W-247	94.9	94.4	72.1*	8.4	57.4*	54.5
VA96W-250	96.9	91.8	72.7*	9.3	57.0*	51.8*

*Score is one standard deviation away from the standard cultivar's score.

**Score is two standard deviations away from the standard cultivar's score.

1100
06/11/02

Table 9. Milling and baking quality of VA96W-247 wheat: 1997 crop

Entry	Milling quality score	Baking quality score	Micro T.W. Lb/Bu	Soft equiv.	Flour yield %	Flour prot. %	Micro AWRC %	Cookie diam. cm
Massey (standard)	100.0	A	62.3	52.2	70.3	8.5	57.3	17.6
FFR 555W	104.2	A	61.7	51.4	71.8	8.2	56.3	17.4
Pion 2580	86.9	D	61.6	48.5*	67.8**	7.5	61.3**	16.9**
Jackson	99.6	B	63.3	54.0	69.8	8.0	59.1*	17.1**
CK 9835	104.3	A	62.2	59.5	70.5	7.1	61**	18.1
VA96W-158	102.1	A	62.0	51.3	71.0	7.5	57.2	17.4
VA96W-247	93.9	C	62.9	50.2	69.1*	7.5	61.8**	17.3
VA96W-250	96.4	B	62.6	49.3*	69.9	6.9	61.1**	17.5
VA96W-270	95.0	C	63.0	47.1*	69.9	8.5	58.3	17.4

*Score is one standard deviation away from the standard cultivar's score.

**Score is two standard deviations away from the standard cultivar's score.

11220
06/01/00

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Virginia Tech Intellectual Properties, Inc.	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER VA96W-247	3. VARIETY NAME 38247
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 1872 Pratt Dr., Suite 1625 Blacksburg, VA 24060	5. TELEPHONE (include area code) 540-951-9374	6. FAX (include area code) 540-951-5292
7. PVPO NUMBER 200200260		

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain. YES NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? YES NO
 If no, give name of country

10. Is the applicant the original owner? YES NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

YES NO *If no, give name of country*

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

YES NO *If no, give name of country*

11. Additional explanation on ownership (if needed, use reverse for extra space):

Original owner Virginia Polytechnic Institute and State University assigned its ownership to current owner Virginia Tech Intellectual Properties Inc. (see attached)

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.
2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.
3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs). Persons with disabilities who require alternative means for communication of program information (braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

STD-470-E (07-97) (Destroy previous editions).

Electronic version designed using WordPerfect InForms by USDA-AMS-#MB.