No. 7200033

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

North Carolina Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED 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 seventeen 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 USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS FIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Blueboy II'

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 *this* 26th *day of* February *in the year of our Lord one thousand nine hundred and* seventy-four

Attest:

D. R. Rollin

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L. Butz

Secretary of Agriculture

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION: Blueboy II	2. KIND NAME: Wheat	FOR OFFICIAL USE ONLY PVPO NUMBER: 72033
3. GENUS AND SPECIES NAME: Triticum aestivum L. em Thell.	4. FAMILY NAME *(Botanical)*: Poaceae	FILING DATE: 9/10/71 TIME: 2 A.M. P.M.
	5. DATE OF DETERMINATION: September 1, 1971	FEE RECEIVED: $ 750.00 CHARGES:
6. NAME OF APPLICANT(S): North Carolina Agricultural Experiment Station	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: North Carolina State University School of Agriculture & Life Sciences Agricultural Experiment Station Box 5847 Raleigh, North Carolina 27607	8. TELEPHONE AREA CODE AND NUMBER: 919-755-2719
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*: Public Institution	10. STATE OF INCORPORATION:	11. DATE OF INCORPORATION:

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

R. W. McMillen, Manager
N. C. Foundation Seed Producers, Inc.
P. O. Box 5687
State College Station
Raleigh, North Carolina 27607

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 12A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52, P.L. 91-577)*
- [X] 12B. Exhibit B, Botanical Description of the Variety
- [X] 12C. Exhibit C, Objective Description of the Variety
- [X] 12D. Exhibit D, Data Indicative of Novelty
- [X] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable. *(See Section 52, P.L. 91-577).*

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a), P.L. 91-577) (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [X] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? Three Generations
Foundation - Registered - Certified

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act (P.L. 91-577).

Sept 14 1971
(DATE)

R. W. McMillen
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

RECEIVED
SEP 27 1971
U.S. DEPARTMENT OF AGRICULTURE
CONS. GRAIN DIVISION

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unles noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

12a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

12b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

EXHIBIT A

Pedigree of Blueboy II

[(Triumph x Triticum Agropyron elongatum) C.I. 13523 x Tascosa F_7]
X
Blueboy 4

The wheat variety Blueboy represented a real breakthrough in wheat yield potential. It has been grown successfully throughout the Eastern Soft Red Winter Wheat Area. Blueboy has one major weakness, however, which has been apparent since its first years of testing. It is not as resistant to leaf rust as would be desired. Therefore, the following represents the breeding procedure for the development of Blueboy II.

In an effort to correct this weakness, Dr. C. F. Murphy initiated a backcrossing program in the winter of 1965-66. Blueboy was used as the recurrent parent and selection 62C444 from the cross (Triumph x Triticum Agropyron elongatum) C. I. 13523 x Tascosa F_7, was used as the source of resistance. Selection 62C444 was obtained from Dr. Owen G. Merkle, CRD, ARS, USDA, Texas A & M College. It has been described as having a single gene controlling a high level of rust resistance. Utilizing the growth chamber, four backcrosses were made, with the last backcross being harvested in July of 1968. Dr. T. T. Hebert cooperated in the screening for rust reactions.

After screening an increase of the last backcross, approximately 2,500 seeds were vernalized and transplanted at Aberdeen, Idaho, in the spring of 1969. Despite adverse weather conditions, 840 plants were harvested. Seed from each of these plants was planted in a double-spaced, sixteen-foot row at the Piedmont Research Station in the fall of 1969. Ten seeds from each plant were screened for rust in the greenhouse during the winter of 1969-70. If a susceptible or heterozygous reaction was noted in the greenhouse, the corresponding row in the field was removed. The remaining rows were carefully scrutinized and approximately 25 more rows were eliminated as possible off-types.

Blueboy II is a uniform variety. Any recognizable variants which should occur are removed during the regular production of Breeder's seed. The stability of the variety has been well demonstrated in that it has been grown over a wide area with no breakdown of its uniformity.

Blue boy II

EXHIBIT B

Growth Habit – winter

Height – short (semi-dwarf)

Stem

Color – white purple ?

strength – weak mid-strong strong

Leaf

Spike

Awnedness – Awnless Apically awneted Awneted Awned

Shape – Fusiform Oblong Clavate Elliptical

Density – Lax Middense Dense

Position – Erect Inclined Nodding

Glume

Color – white yellow brown ?

Length – short midlong long

Width – Narrow midwide wide

Shoulder

width – Narrow midwide wide

shape – wanting oblique rounded square elevated apiculate

Beak

width – narrow midwide wide

shape – obtuse acute acuminate

? length – (measure) .7 - 1.0

Awn

Kernel

Color – white red

length – short midlong long Short to Midlong

Texture – soft semihard to hard

shape – ovate Elliptical Oval

Germ

size – small midsized large

Crease

Width – Narrow midwide wide

Depth – shallow middeep deep pitted

Cheek

shape – Rounded Angular

Brush

size – small midsized large (collared)

length – short ? midlong long ?

FORM GR-470-6
(7-3-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT *(TRITICUM SPP.)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
North Carolina Agricultural Experiment Station

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
North Carolina State University
School of Agriculture & Life Sciences, Agri. Exp. Station
Box 5847, Raleigh, North Carolina 27607

FOR OFFICIAL USE ONLY
PVPO NUMBER
72033
VARIETY NAME OR TEMPORARY DESIGNATION
Blueboy II

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0 8 9] or [0 9]) when number is either 99 or less or 9 or less.

1. KIND:

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

2. TYPE:

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

[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

[O N A] FIRST FLOWERING (Not applicable) [O N A] LAST FLOWERING (Not applicable)

4. MATURITY *(50% Flowering)*:

[ ] NO. OF DAYS *EARLIER* THAN ..... [1] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[0 2] NO. OF DAYS *LATER* THAN ..... [ ] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

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

[0 9 7] CM. HIGH

[0 2] CM. TALLER THAN ..... [1] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[ ] CM. SHORTER THAN ..... [ ] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING *(See reverse)*:

[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] 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:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[ ] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____

[ ] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[ ] 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)*:

FORM GR-470-6 (REVERSE) 'Blueboy II' 72-33

11. HEAD:

[1] Density: 1 = LAX 2 = DENSE

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER *(Specify)* _____

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

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

[ ][ ] CM. LENGTH

[ ][ ] MM. WIDTH

12. GLUMES AT MATURITY:

[3] Length: 1 = SHORT *(CA. 7 mm.)* 2 = MEDIUM *(CA. 8 mm.)* 3 = LONG *(CA. 9 mm.)*

[1] Width: 1 = NARROW *(CA. 3 mm.)* 2 = MEDIUM *(CA. 3.5 mm.)* 3 = WIDE *(CA. 4 mm.)*

[3] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[2] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[ ] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[ ] 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] Cheek: 1 = ROUNDED 2 = ANGULAR

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

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

[ ] Embryo size: 1 = SMALL *(Lemhi)* 2 = MEDIUM *(Scout)* 3 = LARGE *(Arthur)*

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

[0][7] MM. LENGTH [3.5] MM. WIDTH [0][4] GM. PER 100 SEEDS

17. SEED CREASE: (See Exhibit B)

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

[ ] 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 *(Races)* Most

[2] LEAF RUST *(Races)* All

[0] STRIPE RUST *(Races)* _____

[2] LOOSE SMUT

[1] POWDERY MILDEW

[0] BUNT

[2] OTHER *(Specify)* Soil-Borne Mosaic Virus

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

[0] SAWFLY

[1] APHID *(Bydv.)*

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER *(Specify)* _____

HESSIAN FLY RACES: [0] GP [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

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

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. Briggle 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.)*

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT D

Blueboy II is similar in appearance to Blueboy but has resistance to leaf rust. Blueboy II carries the "Agent" source of leaf rust resistance, in addition to the LR_2 and LR_{10} genes from Blueboy.

Blueboy is the most similar variety to Blueboy II.

Exhibit E

Statement of the Basis of Applicants Ownership

Blueboy II Wheat

The wheat variety Blueboy represented a real breakthrough in wheat yield potential. It has been grown successfully throughout the Eastern Soft Red Winter Wheat Area. Blueboy has one major weakness, however, which has been apparent since its first years of testing. It is not as resistant to leaf rust as would be desired.

In an effort to correct this weakness, I initiated a backcrossing program in the winter of 1965-66. Blueboy was used as the recurrent parent and selection 62C444 from the cross (Triumph x Triticum Agropyron elongatum) C. I. 13523 x Tascosa F_7, was used as the source of resistance. Selection 62C444 was obtained from Dr. Owen G. Merkle, CRD, ARS, USDA, Texas A & M College. It has been described as having a single gene controlling a high level of rust resistance. Utilizing the growth chamber, four backcrosses were made, with the last backcross being harvested in July of 1968. Dr. T. T. Hebert cooperated in the screening for rust reactions.

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Seed was harvested from each of the remaining 168 rows and samples sent to the USDA Soft Wheat Laboratory at Wooster, Ohio. Their report indicated 26 lines of questionable milling quality. Seed from those 26 rows was then discarded and the seed from the remaining 142 rows was thoroughly mixed to serve as a seed source. Nearly eight bushels of seed were obtained. Other than seed used for testing purposes, this seed was given to the North Carolina Foundation Seed Producers, Inc., for a preliminary increase.

Designated as N.C. 2, this line was tested in the Uniform Southern Soft Wheat Nursery, the Uniform Eastern Soft Wheat Nursery, the North Carolina Official Variety Test and in my own nurseries. Background information and data from these tests were presented to the North Carolina State University Breeder's Release Board and, based upon their recommendation, the Director of the North Carolina Agricultural Experiment Station approved this variety for release, as Blueboy II, on September 1, 1971.

DATE: September 1, 1971

Charles F. Murphy
Associate Professor
Department of Crop Science
North Carolina State Univ.

PHILADELPHIA, PA
CABLE ADDRESS: ROHMHAAS TELEX 845-247 TWX 710-670-0205

ROHM AND HAAS COMPANY

RECEIVED
OCT 17 1983

October 7, 1983

Plant Variety Protection Office
U.S. Department of Agriculture
National Agricultural Library Building
Beltsville, MD 27705

Dear Sir or Madam:

I would like to receive a copy of Plant Variety certificates for two wheat varieties, Blueboy II (8 pages) and Roy (14 pages). The requisite fee of $22.00 is enclosed.

Thank you.

Very truly yours,

Polly E. Ramstad

Polly E. Ramstad

PER/cap
Enclosure

ROHM AND HAAS COMPANY
PHILADELPHIA, PENNSYLVANIA 19105

304245
CHECK NUMBER

65-306
521

THE BANK OF DELMAR
DELMAR, MARYLAND

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DOLLARS	CTS.
$ ********22	00

PAY →

ROHM AND HAAS COMPANY
ACCOUNT NO. 8

TO THE ORDER OF

TREASURER OF THE UNITED STATES
U.S. DEPARTMENT OF AGRICULTURE
NAT'L AGRICULTURAL LIBRARY BLDG.
BELTSVILLE, MD 27705

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