

No.

8800110



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Rogers NK Seed Co.

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 *eighteen* 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 (ACT 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'BBL 156'

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 29th day of May in the year of our Lord one thousand nine hundred and ninety-two.

Attest:

Kenneth Hoans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Edward Madison
Secretary of Agriculture



U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions on reverse)

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) <i>NK AAA 3Jan 1992</i> Rogers Brothers Seed Company		2. TEMPORARY DESIGNATION BX 156-2-3-6	3. VARIETY NAME <i>BBL 156</i> <i>per letter of 8 May 1992 AAA 18 May 1992</i>
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. Box 4727 Boise, Idaho 83711		5. PHONE (Include area code) (208) 322-7272	FOR OFFICIAL USE ONLY PVPO NUMBER 8800110
6. GENUS AND SPECIES NAME Phaseolus vulgaris	7. FAMILY NAME (Botanical) Leguminosae		FILING DATE <i>March 9, 1988</i> TIME <i>2:15</i> <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.
8. KIND NAME Snap bean	9. DATE OF DETERMINATION 1985		FEE RECEIVED AMOUNT FOR FILING \$ <i>1800.00</i> DATE <i>Feb. 23, 1988</i> AMOUNT FOR CERTIFICATE \$ <i>200.00</i> DATE <i>Jan. 28, 1991</i>
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			12. DATE OF INCORPORATION February 25, 1975
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware			
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Mr. Charles Green <i>JIM MCCONNELL</i> <i>per del. conv. 2 Jan 1992 AAA 3 Jan 1992</i> P.O. Box 4727 Boise, Idaho 83711 (208) 322-7272 PHONE (Include area code):			

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- b. Exhibit B, Novelty Statement.
- c. Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.)
- d. Exhibit D, Additional Description of Variety.
- e. Exhibit E, Statement of the Basis of Applicant's Ownership.

15. 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) of the Plant Variety Protection Act.) Yes (If "Yes," answer items 16 and 17 below) No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? Yes No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? Foundation Registered Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? Yes (If "Yes," give date) No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? Yes (If "Yes," give names of countries and dates) No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.
The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) 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.
Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT <i>Charles Green</i>	DATE <i>2/17/88</i>
SIGNATURE OF APPLICANT	DATE

INSTRUCTIONS

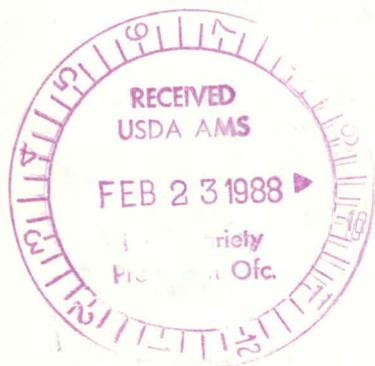
*

General: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$1,800 fee (\$200 filing fee and \$1,600 examination fee) to U.S. Department of Agriculture, Agricultural Marketing Service, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

Item

- 9 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.
- 14a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.
- 14b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.
- 14c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.
- 14d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.
- 14e Section 52(4) of the Plant Variety Protection Act requires applicants to furnish a statement of the basis of the applicant's ownership. The applicant may be the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.
- 15 If "Yes" is specified (*seed of this variety be sold by variety name only as a class of certified seed*) the applicant may **NOT** reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "No," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)
- 19 See section 41 (i, j) and 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice for eligibility requirements.

* Furnish only untreated seed with your application. The Plant Variety Protection Office has no approved facilities to safely handle treated seed.



BX-156-2-3-6

Exhibit AOrigin and Breeding History of Variety

'BBL 156' AAA 10 June 1992

~~'BX-156-2-3-6'~~ an early to mid-season garden bean variety was derived from the following hand pollinated cross:

(OSU 4843-1) x [(Rogers GP#473 x OSU #58) x GP66937A] x [white seeded Provider x Blue Lake FM-1]

The final cross of the above pedigree was made during the winter of 1980 and the subsequent series of selections were made:

<u>YEAR</u>	<u>GENERATION</u>	<u>PLOT</u>	<u>AMOUNT HARVESTED</u>
1980	F1	80-GH-235	Bulked
1981	F2	812185	1 single
1982	F3	821795	9 singles
1982	F4	82-GH-040	Bulked
1983	F5	831659	12 singles
1983	F6	83-CA-434	Bulked
1984	F7	846073	Bulked
1985	F8	858161	1 lb. 6 oz. bulked

The harvest seed of plots 85551 and 86B357, 86B357A has been planted for large increases, and are the basic seed stock for the variety 'BX-156-2-3-6'.

The variety 'BX-156-2-3-6' is genetically uniform and stable except for the occurrence of approximately one flat pod rogue per 3000 plants and one string pod rogue per 3000 plants.

BX-156-2-3-6

Exhibit BData Indicative of Novelty

'BBL 156' AAA 10 June 1992

'~~BX-156-2-3-6~~' most closely resembles the bean variety 'BBL #92', but 'BX-156-2-3-6' has a shorter bush, shorter spur and darker pod color than 'BBL #92'. The following table summarizes these differences that were recorded during the 1986 and 1987 season from field plantings at Twin Falls, Idaho:

(A T test analysis is enclosed).

	<u>BUSH HT</u> <u>CM*</u>	<u>SPUR LENGTH</u> <u>MM**</u>	<u>EXTERNAL POD</u> <u>COLOR***</u>
1986:			
BX-156-2-3-6	35.9	10.4	146C
BBL #92	51.7	13.7	146D
1987:			
BX-156-2-3-6	37.9	11.0	146C
BBL #92	42.3	13.8	146D

*Bush height measurements are an average from 25 plants of each variety taken from plots that were planted at a uniform spacing of 4 to 5 plants per foot of row and a 56 cm row spacing using a vacuum type seeder.

**Spur length measurements are from one fully developed pod per each of 25 separate plants per variety.

***Color rating by the Royal Horticulture Society color charts.

(The two varieties in each comparison were grown in the same field and within a 400 foot proximity.)

T TEST ANALYSIS

BBL 156' AAA 10 June 1992

PVP CANDIDATE VARIETY: ~~BX-156-2-3-6~~
 COMPARATIVE VARIETY: BBL 92
 YEARS/LOCATION: 1986/1987 Twin Falls, Idaho
 CHARACTERISTIC: Bush height
 Probability Level: 0.050

YEAR/LOCATION: 1986 Twin Falls, Idaho

VARIETY	Sample Size	Mean, cm	EMS	Calculated T value	Tabular T value
BX-156-2-3-6	23	35.91	15.18	9.728	2.074
BBL 92	23	51.70	45.41		

YEAR/LOCATION: 1987 Twin Falls, Idaho

VARIETY	Sample Size	Mean, cm	EMS	Calculated T value	Tabular T value
BX-156-2-3-6	25	37.92	9.00	4.686	2.064
BBL 92	25	42.32	13.04		

YEAR/LOCATION:

VARIETY	Sample Size	Mean,	EMS	Calculated T value	Tabular T value

T TEST ANALYSIS

' BBL 156 ' ^{AAA} 10 June 1992

PVP CANDIDATE VARIETY: ~~BX-156-2-3-6~~
 COMPARATIVE VARIETY: BBL 92
 YEARS/LOCATION: 1986/1987 Twin Falls, Idaho
 CHARACTERISTIC: Spur length
 Probability Level: 0.050

YEAR/LOCATION: 1986 Twin Falls, Idaho

VARIETY	Sample Size	Mean, mm	EMS	Calculated T value	Tabular T value
BX-156-2-3-6	23	10.39	2.86	14.92	2.074
BBL 92	23	13.70	7.59		

YEAR/LOCATION: 1987 Twin Falls, Idaho

VARIETY	Sample Size	Mean, mm	EMS	Calculated T value	Tabular T value
BX-156-2-3-6	25	11.04	7.96	3.177	2.064
BBL 92	25	13.84	11.46		

YEAR/LOCATION:

VARIETY	Sample Size	Mean,	EMS	Calculated T value	Tabular T value

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1513L 156'
AAA 10 June 1992

Data file **PVP8687**
Title: BBL92/BX-156-2-3-6

1986

Function: ANOVA-1
Data case no. 1 to 50
Without selection

One way ANOVA grouped over variable 2
VARIETY
with values from 1 to 2

Variable 7
PLANT HEIGHT (CM)

A N A L Y S I S O F V A R I A N C E T A B L E

	Degrees of Freedom	Sum of Squares	Error Mean Square	F-value	Prob.
Between	1	3062.2701	3062.27	105.56	.000
Within	46	1334.4220	29.01		
Total	47	4396.6921			

Coefficient of Variation= 12.17%

Var. 2	V A R I A B L E Number	Sum	Average	No. 7	SD	SE
1	25.00	1297.686	51.91		6.49	1.08
2	23.00	826.135	35.92		3.84	1.12
Total	48.00	2123.821	44.25		9.67	1.40
Within					5.39	

Bartlett's Test

Chi-square = 5.810587
Number of Degrees of Freedom = 1
Approximate Significance = .0159

Data file PVP8687
 Title: BBL92/BX-156-2-3-6

1987

8800110

*BBL 156
 MAR 10 June 1992*

Function: ANOVA-1
 Data case no. 51 to 100
 Without selection

One way ANOVA grouped over variable 2
 VARIETY
 with values from 1 to 2

Variable 4
 PLANT HEIGHT

ANALYSIS OF VARIANCE TABLE

	Degrees of Freedom	Sum of Squares	Error Mean Square	F-value	Prob.
Between	1	242.0000	242.00	21.95	.000
Within	48	529.2800	11.03		
Total	49	771.2800			

Coefficient of Variation = 8.28%

Var. 2	V A R I A B L E Number	S U M Sum	A V E R A G E Average	No. 4 SD	SE
1	25.00	1058.000	42.32	3.61	0.66
2	25.00	948.000	37.92	3.00	0.66
Total	50.00	2006.000	40.12	3.97	0.56
Within				3.32	

Bartlett's Test

Chi-square = .8133482
 Number of Degrees of Freedom = 1
 Approximate Significance = .3671

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BBL 156'

AA 10 June 1992

Data file **PVP8687**
Title: BBL92/BX-156-2-3-6

1986

Function: ANOVA-1
Data case no. 1 to 50
Without selection

One way ANOVA grouped over variable 2
VARIETY
with values from 1 to 2

Variable 6
SPUR LENGTH

A N A L Y S I S O F V A R I A N C E T A B L E

	Degrees of Freedom	Sum of Squares	Error Mean Square	F-value	Prob.
Between	1	120.2784	120.28	21.81	.000
Within	46	253.6383	5.51		
Total	47	373.9167			

Coefficient of Variation= 19.50%

Var.	V A R I A B L E	No.	6		
2	Number	Sum	Average	SD	SE
1	25.00	339.000	13.56	2.81	0.47
2	23.00	239.000	10.39	1.70	0.49
Total	48.00	578.000	12.04	2.82	0.41
Within				2.35	

Bartlett's Test

Chi-square = 5.428109
Number of Degrees of Freedom = 1
Approximate Significance = .0198

Data file **FVPB687**
 Title: BBL92/BX-156-2-3-6

1987

1BBL 156'
AAA 10 June 1982

Function: ANOVA-1
 Data case no. 51 to 100
 Without selection

One way ANOVA grouped over variable 2
 VARIETY
 with values from 1 to 2

Variable 6
SPUR LENGTH

ANALYSIS OF VARIANCE TABLE

	Degrees of Freedom	Sum of Squares	Error Mean Square	F-value	Prob.
Between	1	98.0000	98.00	10.09	.002
Within	48	466.3200	9.71		
Total	49	564.3200			

Coefficient of Variation = 25.06%

Var. 2	V A R I A Number	B L E Sum	Average	No. SD	6 SE
1	25.00	346.000	13.84	3.39	0.62
2	25.00	276.000	11.04	2.82	0.62
Total	50.00	622.000	12.44	3.39	0.48
Within				3.12	

Bartlett's Test

Chi-square = .783038
 Number of Degrees of Freedom = 1
 Approximate Significance = .3762

BX-156-2-3-6
Supplement of Exhibit B
Explanation of Bartlett's Test

8800110
'BBL 156'
AAA
10 June 1992

Bartlett's Test For Homogeneity of Variance:

Tests whether the variability within each variable level is the same. Here the level of significance is above 0.05, so the difference is insignificant between variances. That's good since it allows one to use the error mean square as the valid error tester. We could carry the ANOVA one step further to a T-test. Next time, we can get MSTAT to print it out, but for those that are already submitted, the information needed is all there. Compare the difference in means to:

$$t \text{ 2 tailed probability at } r-1 \text{ degrees of freedom } \sqrt{2 \frac{EMS}{r}}$$

$$= 2.01 \sqrt{2 \frac{(.92)}{49}}$$

$$= 0.3895$$

Since this value is less than the difference in means (1.2cm) the distributions for the pod lengths between the varieties don't overlap and are therefore different.

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

EXHIBIT C
(Bean)

OBJECTIVE DESCRIPTION OF VARIETY
BEAN (*Phaseolus vulgaris* L.)

NAME OF APPLICANT(S) Rogers Brothers Seed Company	FOR OFFICIAL USE ONLY
	PVPO NUMBER 8800110
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 1755 Westgate Dr., Suite 100 Boise, ID 83704	VARIETY NAME OR TEMPORARY DESIGNATION IBBL 156 ^c 1987
	BX-156-2-3-6 AAA 10 June 1992

Place numbers in the boxes (e.g.) for the characters that best describe this variety. Measured data should be for SPACED PLANTS. Ranges may also be given. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____ . The location of test area is _____ . Please answer questions appropriate for your variety if the information is available.

1. TYPE:

1 = Field (dry-edible) 2 = Garden

2. MARKET MATURITY:

(Maturity data collected at Twin Falls, Idaho)

Days to edible pods Days to green shells

Days to dry seeds

Heat units to edible pods Heat units to green shells

Heat units to dry seeds

<input type="text" value="4"/> No. days earlier than	<input type="text" value="7"/>	} 1 = Tendercrop 2 = Kentucky Wonder 3 = Kinghorn Wax 4 = White Kidney 5 = Michelite 62 6 = Dwarf Horticultural 7 = Bush Blue Lake 290 8 = Other (specify below)
..... Same as	<input type="text" value="6"/>	
<input type="text" value="5"/> No. days later than	<input type="text" value="8"/>	

Bountiful

3. PLANT:

1 = Determinate 2 = Indeterminate

cm height

<input type="text" value="0"/> <input type="text" value="5"/> cm shorter than	<input type="text" value="1"/>	} comparison variety from above
..... Same as	<input type="text" value="7"/>	
<input type="text" value="0"/> <input type="text" value="2"/> cm taller than	<input type="text" value="4"/>	

cm spread Number primary branches near base

<input type="text" value="0"/> <input type="text" value="8"/> cm narrower than	<input type="text" value="9"/>	} comparison variety from above
..... width same as	<input type="text" value=""/>	
<input type="text" value=""/> <input type="text" value=""/> cm wider than	<input type="text" value=""/>	

2 Branching habit:
1 = compact 2 = open

1 Main stalk: 1 = brittle 2 = wirey 1 1 stout 2 thin

3. PLANT: (Cont'd)

3 Pod position: 1 = low 2 = high 3 = scattered

2 Bush form (illustrated below):



1 = spherical bush form

2 = stem bush form

3 = wide bush form

4 = high bush form

5 = other (specify) _____

4. LEAVES:

2 1 = smooth 2 = wrinkled

1 1 = dull 2 = glossy

1 Size: 1 = small (Earliwax) 2 = medium 3 = large (Tendercrop)

3 Color: 1 = light green (as light or lighter than Bountiful) 2 = medium green
3 = dark green (as dark or darker than Bush Blue Lake 290)

5. FLOWERS:

1 Color: 1 = white 2 = cream 3 = pink 4 = lilac 5 = purple 6 = Other (specify) _____

4 8 Days to 50% bloom

6. FRESH PODS: (Edible maturity, average for 20 pods)

2 Exterior color: 1 = light green (as light or lighter than Bountiful)
2 = medium green
3 = dark green (as dark or darker than Bush Blue Lake 290)
4 = light yellow (Brittlewax)
5 = golden yellow (Cherokee Wax)
6 = green-red variagated (Horticultural)
7 = other (specify) _____

% Sieve size distribution at optimum maturity for non-flat pods

Note:

- 1 = 4.76 mm to 5.76 mm
- 2 = 5.76 mm to 7.34 mm
- 3 = 7.34 mm to 8.34 mm
- 4 = 8.34 mm to 9.53 mm
- 5 = 9.53 mm to 10.72 mm
- 6 = 10.72 mm or larger

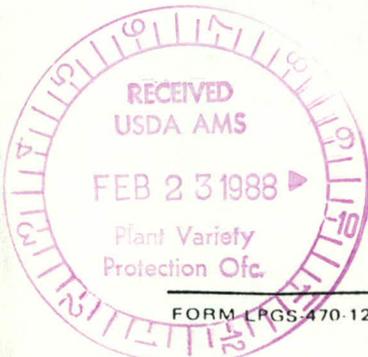
1	2	3	4	5	6
	12		35	38	15

3 sieve 1 1 cm length 8 mm width 8 mm thickness

4 sieve 1 3 cm length 9 mm width 9 mm thickness

5 sieve 1 5 cm length 1 1 mm width 1 0 mm thickness

6 sieve cm length mm width mm thickness



6. FRESH PODS: (Cont'd)

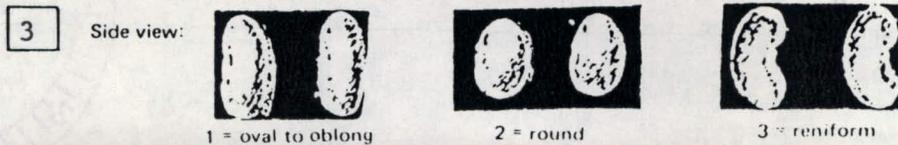
- 3 Cross section pod shape: 1 = flat 2 = oval 3 = round 4 = heart
- 2 Creaseback: 1 = present 2 = absent
- 2 Pubescence: 1 = none 2 = sparse 3 = considerable
- 2 Spur: 1 = straight 2 = slightly curved 3 = curved
- 1 Constrictions: 1 = none 2 = slight 3 = deep
- 2 Pod flesh: 1 = light 2 = medium 3 = dark
- 1 1 mm spur length
- 1 Fiber: 1 = none 2 = sparse 3 = considerable
- 7 Number of seeds per pod
- 1 Surface: 1 = smooth 2 = rough
- 2 Suture string: 1 = present 2 = absent
- 1-2 Seed development (Snap Bean): 1 = slow 2 = medium 3 = fast
- 1 Machine harvest: 1 = adapted 2 = not adapted
- 2 Pod flavor: (1) Standard (Tendercrop)
 (2) Mild Blue Lake (BBL 274)
 (3) Strong Blue Lake (Pole FM1)
 (4) Mild Romano (Roma)
 (5) Strong Romano (Pole Romano)
 (6) Other (specify) _____

7. SEED COAT COLOR:

- 1 1 = Monochrome 2 = Polychrome 2 1 = shiny 2 = dull
- 1 Primary color: } 1 = white 2 = yellow 3 = buff 4 = tan
- 1 Secondary color: } 5 = brown 6 = pink 7 = red 8 = purple
 9 = blue 10 = black 11 = other (specify) _____
- 1 Color Pattern: 1 = none 2 = splashed 3 = mottled 4 = striped 5 = flecked 6 = dotted
- Secondary color location: 1 = hilar ring 2 = ventral surface
 3 = sides 4 = dorsal surface
 5 = not restricted to any area 6 = combination of location (specify below) _____
- Hilar ring on colored seeds: 1 = absent 2 = narrow 3 = butterfly shaped

8. SEED SHAPE AND SIZE:

- 1 Hilum view: 1 = elliptical 2 = oval 3 = round 4 Cross section: 1 = elliptical 2 = oval 3 = cordate 4 = round



8. SEED SHAPE AND SIZE: (Cont'd)

2 1 = truncate ends 2 = rounded ends

2 9 gm/100 seed

9 gm/100 seed lighter than 1 }
gm/100 seed same as } comparison variety from page one

8 gm/100 seed heavier than 5 }

9. ANTHOCYANIN: (1 = absent 2 = present)

1 Flowers 1 Stems 1 Pods 1 Seeds 1 Leaves

10. DISEASE RESISTANCE (0 = not tested 1 = susceptible 2 = resistant):

- 0 Anthracnose (specify race below) _____
- 0 Rust (specify race below) _____
- 0 Powdery mildew
- 0 Fusarium root rot
- 0 Pythium root rot
- 0 Rhizoctonia root rot
- 0 Pythium wilt
- 0 Angular leaf spot
- 0 Bacterial wilt
- 0 Halo blight (specify race below) _____
- 0 Fuscous blight
- 0 Red node virus
- 0 Pod mottle virus
- 2 Bean common mosaic virus (specify strain below)
BV-1 and NY15 _____
- 0 Mosaic mottle
- 0 Black root
- 0 Bean yellow mosaic virus
- 0 Curly top
- Other (specify below) _____

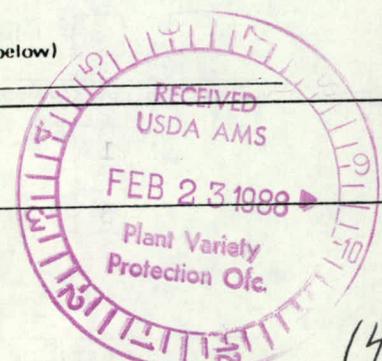
11. INSECT RESISTANCE: (0 = not tested 1 = susceptible 2 = resistant)

- 0 Aphids
- 0 Leaf hopper
- 0 Lygus
- 0 Pod borer
- 0 Root knot nematode
- 0 Seed corn maggot
- 0 Thrips
- 0 Weavils
- Other (specify below) _____

12. PHYSIOLOGICAL RESISTANCE: (0 = not tested 1 = susceptible 2 = resistant)

0 Heat 0 Cold 0 Drought 0 Air pollution

13. COMMENTS:



14

BX-156-2-3-6

Exhibit DA Botanical Description of the Variety

/ BBL 156 AAA 10 June 1992

'~~BX-156-2-3-6~~' is an early to mid-season maturity Bush Blue Lake variety. It has an erect, compact bush that is about 36 cm. tall as compared to 46 cm. for 'BBL #92'. The 15 cm. pods are 9.5 to 10 cm. in diameter, are mostly straight, and are smooth, with typical Blue Lake color. 'BX-156-2-3-6' is a departure from the traditional Blue Lakes in as much as the pods stay straighter and smoother and the bush is more erect and compact than previous introductions of this type. The pods exhibit the traditional Blue Lake flavor and firmness.

BX 156-2-3-6

EXHIBIT E

BBL 156 STATEMENT OF THE BASIS OF APPLICANT OWNERSHIP
10 June 1992

~~BX 156-2-3-6~~ was developed by plant breeders employed by Rogers Brothers Seed Company and is owned by Rogers Brothers Seed Company.

State of Delaware

Office of the Secretary of State

PAGE 1

I, WILLIAM T. QUILLEN, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THAT THE SAID "ROGERS NK SEED CO.", FILED A CERTIFICATE OF AMENDMENT, CHANGING ITS NAME TO "ROGERS SEED CO.", THE FIFTH DAY OF MAY, A.D. 1994, AT 9 O'CLOCK A.M.



William T. Quillen

William T. Quillen, Secretary of State

0810041 8320

944080001

AUTHENTICATION: 7120759

DATE: 05-16-94

17

CERTIFICATE OF AMENDMENT
OF
CERTIFICATE OF INCORPORATION
OF
ROGERS NK SEED CO.

Adopted in accordance with the provisions
of Section 242 of the General Corporation
Law of the State of Delaware

EFFECTIVE DATE: June 1, 1994

We, Willem van Overschot, President, and Richard B. Geller, Secretary, of Rogers NK Seed Co., a corporation existing under the laws of the State of Delaware, do hereby certify as follows:

FIRST: The Certificate of Incorporation of the corporation was filed on 2/27/75.

SECOND: The Certificate of Incorporation of said corporation has been amended as follows:

By striking out the whole of Article I thereof as it now exists and inserting in lieu and instead thereof, a new Article I, reading as follows:

ARTICLE I

Name

The name of the Corporation is ROGERS SEED CO.

THIRD: Such amendment has been duly adopted in accordance with the provisions of the General Corporation Law of the State of Delaware, by the unanimous written consent of all of the stockholders entitled to vote in accordance with the provisions of Section 228 of the General Corporation Law of the State of Delaware.

FOURTH: See attached Written Consent of Sole Shareholder and Board of Directors' Resolution.

IN WITNESS WHEREOF, we have signed this certificate this 13th day of April, 1994.

Willem van Overschot
Willem van Overschot, President

Richard B. Geller
Richard B. Geller, Secretary

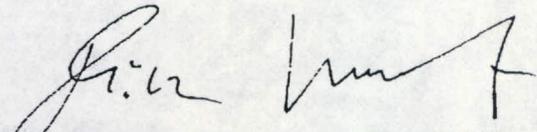
ROGERS NK SEED CO.

WRITTEN CONSENT OF SOLE SHAREHOLDER

SANDOZ CORPORATION, owner of all of the issued and outstanding shares of ROGERS NK SEED CO., hereby consents, pursuant to Section 228 of the Delaware General Corporation Law, to the adoption of the following resolution as and for the act of the shareholder:

RESOLVED, that SANDOZ CORPORATION, as sole shareholder, approves the amendment to Article I of the Certificate of Incorporation of ROGERS NK SEED CO., changing its name to **ROGERS SEED CO.**

Dated: April 22, 1994



Heinz P. Imhof,
Chief Executive Officer
Sandoz Corporation

ROGERS NK SEED CO.

RESOLUTION

RESOLVED, that according to Section 242 of the General Corporation Law of the State of Delaware, that Article I of the Certificate of Incorporation be amended, effective June 1, 1994, to read as follows: The name of the Corporation is **ROGERS SEED CO.**; and, further,

RESOLVED, that the appropriate officers of Rogers NK Seed Co. be, and they hereby are, authorized to take any and all further action and execute and deliver any and all further documents that may be necessary or desirable in order to carry out and effectuate fully the purposes set forth in the foregoing resolution.

ADOPTED UNANIMOUSLY BY THE BOARD
MARCH 31, 1994

Richard B. Geller
Richard B. Geller, Secretary

State of Delaware
Office of the Secretary of State PAGE 1

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"ROGERS SEED CO.", A DELAWARE CORPORATION,
WITH AND INTO "NOVARTIS SEEDS, INC." UNDER THE NAME OF "NOVARTIS SEEDS, INC.", A CORPORATION ORGANIZED AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS RECEIVED AND FILED IN THIS OFFICE THE TWENTY-FIFTH DAY OF JUNE, A.D. 1997, AT 9 O'CLOCK A.M.

A CERTIFIED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS FOR RECORDING.



Edward J. Freel

Edward J. Freel, Secretary of State

0829320 8100M
971211787

AUTHENTICATION: 8531908
06-26-97

DATE:

STATE OF DELAWARE
SECRETARY OF STATE
DIVISION OF CORPORATIONS
FILED 09:00 AM 06/25/1997
971211767 - 0629320

**CERTIFICATE OF MERGER
OF
ROGERS SEED CO.
INTO
NOVARTIS SEEDS, INC.**

The undersigned corporation organized and existing under and by virtue of the General Corporation Law of Delaware,

DOES HEREBY CERTIFY:

FIRST: That the name and state of incorporation of each on the constituent corporations of the merger is as follows:

<u>NAME</u>	<u>STATE OF INCORPORATION</u>
Novartis Seeds, Inc.	Delaware
Rogers Seed Co.	Delaware

SECOND: That an Agreement and Plan of Merger between the parties to the merger has been approved, adopted, certified, executed and acknowledged by each of the constituent corporations in accordance with the requirements of section 251 of the General Corporation Law of Delaware

THIRD: That the name of the surviving corporation is Novartis Seeds, Inc.

FOURTH: That the Certificate of Incorporation of Novartis Seeds, Inc., a Delaware corporation which will survive the merger, shall be the Certificate of Incorporation of the surviving corporation.

FIFTH: That the executed Agreement and Plan of Merger is on file at the principal place of business of the surviving corporation, the address of which is 7500 Olson Memorial Highway, Golden Valley, MN 55427.

SIXTH: That a copy of the Agreement and Plan of Merger will be furnished by the surviving corporation, on request and without cost, to any stockholder of any constituent corporation.

SEVENTH: That this Certificate of Merger shall be effective on July 1, 1997.

Dated June 23, 1997

NOVARTIS SEEDS, INC.

By: Edward C. Resler
Name: Edward C. Resler
Title: Vice President & General Counsel

Handwritten mark