

No.

8900163



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

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

'Brio'



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 30th day of June in the year of our Lord one thousand nine hundred and ninety-two.

Attest:

Kenneth Evans
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) Asgrow Seed Company		2. TEMPORARY DESIGNATION XP-B221	3. VARIETY NAME Brio
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 9636-190-46 Unit John A. Batcha <i>Kathy Ward</i> Kalamazoo, MI 49001		5. PHONE (Include area code) (616) 385-6605	FOR OFFICIAL USE ONLY VPVO NUMBER 8900163
6. GENUS AND SPECIES NAME Phaseolus vulgaris	7. FAMILY NAME (Botanical) Leguminosae		FILING DATE <i>Apr. 13, 1989</i> TIME <i>11:00</i> <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. KIND NAME Garden Bean	9. DATE OF DETERMINATION September, 1987		FEE RECEIVED AMOUNT FOR FILING \$ <i>1800.00</i> DATE <i>Apr. 13, 1989</i> AMOUNT FOR CERTIFICATE \$ <i>200.00</i> DATE <i>June 25 1992</i>
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION March 22, 1968	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS John A. Batcha Asgrow Seed Company Kalamazoo, MI 49001 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?
Offered for sale in U.S. December 7, 1988 and offered for sale outside U.S. 1989 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>John A. Batcha</i>	DATE <i>April 11, 1989</i>
SIGNATURE OF APPLICANT	DATE

EXHIBIT A

Origin and Breeding History of XP-B221 Garden Bean

AAA
22 May
1992
'Brio' ~~XP-B221~~ was developed at Asgrow's Western Breeding Station (WBS), Twin Falls, Idaho, from white seeded segregants from a program originally intended to backcross colored seed into the bean variety Slenderette:

1-79 Planted Slenderette and Provider in the greenhouse at WBS. Crosses made.

4-79 Planted BC₀ and Slenderette in the greenhouse at WBS. Crosses made.

7-79 Planted BC₁ and Slenderette in the greenhouse at WBS. Crosses made.

11-79 Planted BC₂ and Slenderette in the greenhouse at WBS. Crosses made.

2-80 Planted BC₃ and Slenderette in the greenhouse at WBS. Crosses made.

5-80 Planted BC₄ and Slenderette in the greenhouse at WBS. Crosses made.

8-80 Planted BC₅ and Slenderette in the greenhouse at WBS. Crosses made.

12-80 Planted BC₆ in the greenhouse at WBS. Allowed to self.

6-6-81 Planted BC₆S₁ in the field at WBS. Selections made.

9-81 Planted BC₆S₂ and Slenderette in the greenhouse at WBS. Crosses made.

2-82 Planted BC₇ in the in the greenhouse at WBS. Allowed to self.

6-5-82 Planted BC₇S₁ in the field at WBS. Selected colored-seed plants from a line, R828309, with pods that were longer than those of Slenderette.

6-4-83 Planted BC₇S₂ in the field at WBS. Selected for long pods from progenies still segregating for colored seed.

6-1-84 Planted BC₇S₃ selections in the field at WBS under the numbers R844494, R844495, and R844497. Observations during the growing season indicated the lines were uniform and breeding true for characteristics other than seed color. Harvested these three numbers as bulks, and picked white seed from them.

8-22-86 Planted white seed from R844494, R844495 and R844497, and

from a white-seed selection from R844494 in the greenhouse as R86gh1991, R86gh1992, R86gh1993, and R86gh1994.

6-4-87 Planted progenies from 1986 greenhouse plants in the field at WBS under numbers from R8712638 to R8712933. A few offtype progenies were removed during the growing season. Observations on the remainder indicated they were uniform and breeding true. Seed from these progenies were bulked together, and all subsequent increases of XP-B221 trace to the bulk of this increase.

6-7-88 Planted a sample of 1987 bulk in the field at WBS as R884335. Observations during the growing season confirmed the line was uniform and breeding true.

Observations indicate XP-B221 is uniform and stable within commercially acceptable limits. As is true with other garden bean varieties, a small percentage of variants or offtypes can occur within commercially acceptable limits for almost any characteristic during the course of repeated multiplications.



Asgrow Seed Company
PVP Application
XP-B221 (Brio) Garden Bean)
April 11, 1989

8900163

EXHIBIT B

'Brio' Novelty Statement Concerning XP-B221 Garden Bean (Brio)

ASA
22 May
1992

~~XP-B221~~ is a slender-pod processor variety selected out of a program to backcross colored seed into the variety Slenderette. Seed color of B221 is white, the same as that of Slenderette, but pods of B221 or its ancestors have been noticeably longer every year since the predecessor line of B221 was first selected for pod length in 1982.

To our knowledge the commercial variety that most closely resembles B221 is Slenderette. Comparative characteristics that most clearly distinguish the the two include, but may not be limited to, pod length; in 1988 in a sequential harvest experiment, pods of B221 aveaged 12 mm longer. The F ratio calculated from variety/error variances was 41.4, a value that would occur with a probability of .0002 had there been no real difference in length.

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) Asgrow Seed Company	FOR OFFICIAL USE ONLY
	PVPO NUMBER 8900163
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) Unit 9636-190-46 Kalamazoo, MI 49001	VARIETY NAME OR TEMPORARY DESIGNATION Brio XP-B221

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 Twin Falls, Idaho . Please answer questions appropriate for your variety if the information is available.

1. TYPE:

1 = Field (dry-edible) 2 = Garden

2. MARKET MATURITY:

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

3 No. days earlier than }
 Same as ... }
 No. days later than }

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)
Slenderette

3. PLANT:

1 = Determinate 2 = Indeterminate

cm height

cm shorter than }
 Same as ... } comparison variety from above

cm taller than }

cm spread 3 Number primary branches near base

cm narrower than }
 width same as ... } comparison variety from above

cm wider than }

Main stalk: 1 = brittle 2 = wirey Branching habit:
 1 = compact 2 = open

1 = stout 2 = thin

5

3. PLANT: (Cont'd)

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

1 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

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

2 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 4 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 variegated (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
←		23	55	22	→

3 sieve	<input type="checkbox"/> <input type="checkbox"/>	cm length	<input type="checkbox"/> <input type="checkbox"/>	mm width	<input type="checkbox"/> <input type="checkbox"/>	mm thickness
4 sieve	<input type="checkbox"/> <input type="checkbox"/>	cm length	<input type="checkbox"/> <input type="checkbox"/>	mm width	<input type="checkbox"/> <input type="checkbox"/>	mm thickness
5 sieve	<input type="checkbox"/> <input type="checkbox"/>	cm length	<input type="checkbox"/> <input type="checkbox"/>	mm width	<input type="checkbox"/> <input type="checkbox"/>	mm thickness
6 sieve	<input type="checkbox"/> <input type="checkbox"/>	cm length	<input type="checkbox"/> <input type="checkbox"/>	mm width	<input type="checkbox"/> <input type="checkbox"/>	mm thickness

6. FRESH PODS: (Cont'd)

8900163

- 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 4 mm spur length
- 2 Fiber: 1 = none 2 = sparse 3 = considerable
- 6 Number of seeds per pod
- 1 Surface: 1 = smooth 2 = rough
- 2 Suture string: 1 = present 2 = absent
- 2 Seed development (Snap Bean): 1 = slow 2 = medium 3 = fast
- 1 Machine harvest: 1 = adapted 2 = not adapted
- 1 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 1 1 = shiny 2 = dull
- 1 Primary color: } 1 = white 2 = yellow 3 = buff 4 = tan
- 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:

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

1 Side view:



1 = oval to oblong



2 = round



3 = reniform

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

8900163

2 1 = truncate ends 2 = rounded ends

2 5 gm/100 seed

gm/100 seed lighter than

gm/100 seed same as 8

comparison variety from page one

gm/100 seed heavier than

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 Fuscous blight

0 Rust (specify race below) _____

0 Red node virus

0 Powdery mildew

0 Pod mottle virus

0 Fusarium root rot

Bean common mosaic virus (specify strain below)
"I" gene resistance _____

0 Pythium root rot

2 Mosaic mottle

0 Rhizoctonia root rot

1 Black root

0 Pythium wilt

0 Bean yellow mosaic virus

0 Angular leaf spot

0 Curly top

0 Bacterial wilt

Other (specify below) _____

0 Halo blight (specify race below) _____

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

0 Aphids

0 Root knot nematode

0 Leaf hopper

0 Seed corn maggot

0 Lygus

0 Thrips

0 Pod borer

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:

8900163

Asgrow Seed Company
PVP Application
Garden Bean, XP-B221 (Brio)
April 11, 1989

EXHIBIT 'E'

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

XP-B221 (Brio) was originated and developed by John D. Atkin and David M. Webster Asgrow Breeders. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.