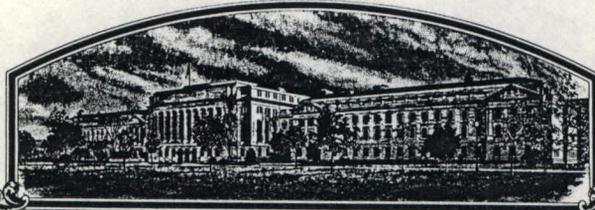


No.

860099



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

BEAN

'Podsquad'

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 April in the year of our Lord one thousand nine hundred and ninety-one.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Ed Madigan
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-B171		3. VARIETY NAME Podsquad	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) (9620-190-20) Asgrow Seed Company 9626-190-31 Kalamazoo, MI 49001		5. PHONE (Include area code) (616) 385-6605 6608		FOR OFFICIAL USE ONLY PVPO NUMBER 8600099	
6. GENUS AND SPECIES NAME Phaseolus vulgaris L.		7. FAMILY NAME (Botanical) Leguminosae		FILING DATE February 27, 1986 TIME 10:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Garden Bean		9. DATE OF DETERMINATION September 1982		FEES RECEIVED AMOUNT FOR FILING \$ 1800. ⁰⁰ DATE February 27, 1986 AMOUNT FOR CERTIFICATE \$ 200. ⁰⁰ DATE March 25, 1991	
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
~~Mr. John A. Batcha~~ ^{KATHY L. WARD 19/2/1986}
~~Asgrow Seed Company~~ ^{Dr. JOHN E. CROSS 19/2/1986}
~~9620-190-20~~ ⁹⁶²⁶⁻¹⁹⁰⁻³¹ (616) 385-6605
~~Kalamazoo, MI 49001~~ ^{Bldg. 190, Gull Rd.} PHONE (Include area code): 6608

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>John A. Batcha</i>	DATE Feb 20, 1986
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.

RECEIVED

FEB 27 1986



AMS
PVPO

EXHIBIT A

Origin and Breeding History of Podsquad (XP-B171)

The original cross was Strike x B38, and Podsquad was developed at Asgrow's Western Breeding Station (WBS), Twin Falls, Idaho, as follows:

- 9-28-74 Parental lines Strike (B77) and B38 planted in the greenhouse at WBS. Crosses made.
- 5-31-75 Planted F₁ seed in the field at WBS. Advanced on generation.
- 5-26-76 Planted F₂ population in the field at WBS. Individual plant selections made.
- 6-7-77 Planted F₃ line in the field at WBS. Individual plant selections made.
- 6-2-78 Planted F₄ line in the field at WBS. Individual plant selections made.
- 6-4-79 Planted F₅ line in the field at WBS. Individual plant selections made.
- 6-7-80 Planted F₆ line in the field at WBS. Individual plant selections made.
- 6-2-81 Planted F₇ line in the field at WBS. Individual plant selections made.
- 6-3-82 Planted F₈ line in the Field at WBS under the number R824682. Observations during the growing season indicated the line was uniform and breeding true. All subsequent increases of Podsquad trace to the bulk of R824682.
- 5-25-85 Planted approximately 350 single plant selections, all tracing back to R824682, in the field at WBS under the number F85730. Observations during the growing season confirmed the line was uniform and breeding true.

Observations indicated Podsquad 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.

DMW
12/10/85

EXHIBIT B

Novelty Statement Concerning Podsquad (XP-B171), Garden Bean

Podsquad is a medium sieve, round-podded snap bean for the fresh market. To our knowledge the commercial variety most similar to Podsquad is Strike. Comparative characteristics that best distinguish Podsquad from Strike include, but may not be limited to, the following:

Pod length. In three years' of replicated trials pods of Podsquad have been consistently longer than those of Strike, by an average of 6 mm (Table 1).

Table 1. Pod Length in mm

<u>Year</u>	<u>Podsquad</u>	<u>Strike</u>
1983	139	135
1984	149	143
1985	<u>149</u>	<u>142</u>
Ave.	146	140

Sieve size. In three years' of replicated trials, pods of Podsquad have been consistently larger in sieve size compared to those of Strike. The average sieve distribution of Podsquad was 51% 4's and 15% 5 and over, compared to 28% 4's and only 4% 5 and over for Strike (Table 2).

Table 2. Sieve Distribution % 4 sieve/% 5+ sieve

<u>Year</u>	<u>Podsquad</u>	<u>Strike</u>
1983	58/4	10/-
1984	40/21	36/3
1985	<u>56/21</u>	<u>59/8</u>
Ave.	51/15	28/4

3. PLANT: (Cont'd)

8600099 PODSQUAD

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

3 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 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 variegated (Horticultural)
7 = other (specify) _____

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

Note:

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

1	2	3	4	5	6
		← 34	51	15	→

3 sieve cm length mm width mm thickness

4 sieve 1 5 cm length 9. 4 mm width 9. 7 mm thickness

5 sieve cm length mm width mm thickness

6 sieve cm length mm width mm thickness

6. FRESH PODS: (Cont'd)

8600099

PODSQUAD

- 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
- 2 Constrictions: 1 = none 2 = slight 3 = deep
- 2 Pod flesh: 1 = light 2 = medium 3 = dark
- 1 2 mm spur length
- 3 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
- 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) _____
- 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
- 1 Side view:   
 1 = oval to oblong 2 = round 3 = reniform

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

2 1 = truncate ends 2 = rounded ends

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PODSQUAD

2 9 gm/100 seed

gm/100 seed lighter than

gm/100 seed same as

comparison variety from page one

0 1 gm/100 seed heavier than 8

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):

1 Anthracnose (specify race below) _____

0 Fuscouc blight

0 Rust (specify race below) _____

0 Red node virus

0 Powdery mildew

0 Pod mottle virus

0 Fusarium root rot

2 Bean common mosaic virus (specify strain below)
"I" gene, resistant to mosaic by all strains

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

0 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:

EXHIBIT E

Statement of the Basis of Applicant's Ownership

XPB171 was originated and developed by Dr. John D. Atkin and Dr. David M. Webster, Asgrow Plant 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.