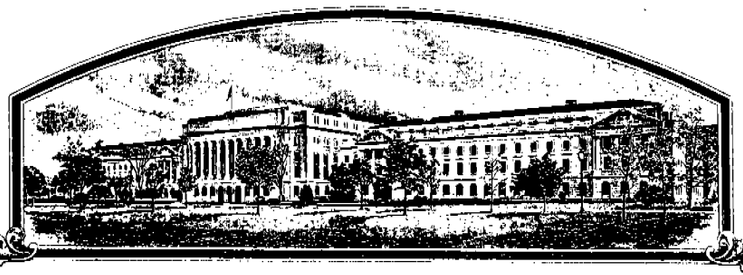

No. 7700068

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 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, 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

'Bush Blue Lake Rio'

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* 7th *day of* December *in the year of our Lord one thousand nine hundred and* seventy-seven

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

see letter 28 Sept 1987

FORM GR-470 (1-76)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

FORM APPROVED OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
XP-B74	Bush Blue Lake R10	PV NUMBER 7700068
2. KIND NAME: Garden Bean	3. GENUS AND SPECIES NAME: Phaseolus vulgaris	FILING DATE 5-31-77 / TIME 11:00 A.M. P.M.
4. FAMILY NAME (BOTANICAL): Leguminosae	5. DATE OF DETERMINATION: August 1972	FEE RECEIVED $250.00 / DATE 5-31-77
		$250.00 / 5-31-77
		$250.00 / 11-7-77

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
Asgrow Seed Company	Kalamazoo, Michigan 49001	(616) 385-6605

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Delaware	March 22, 1968

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

John A. Batcha
Asgrow Seed Company
7000 Portage Road
Unit 9630-190-1
Kalamazoo, Michigan 49001

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [ ] 13D. Exhibit D, Additional Description of the Variety.

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). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? [X] YES [ ] NO

16. The applicant(s) declare(s) 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.

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 Act.

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

May 16, 1977
(DATE)

John A. Batcha 00001
(SIGNATURE OF APPLICANT)
John A. Batcha

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, National Agricultural Library, 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

5 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.

13a Give (1), the genealogy, including public and commerical 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 stability.

13b 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 differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form for all characteristics, for which you have adequate data.

13d 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.

14A 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 or published or the certificate has been issued. However, if the applicant specifies "NO", he may change his choice. (See Section 180.15 of the Regulations and Rules of Practice.)

Asgrow Seed Company
Garden Bean, ~~XP-B74~~ Bush Blue Lake Rio

7700068

EXHIBIT A--Origin and Breeding History of XP-B74 Garden Bean

The original cross, Orbit x Breeding Line 274 x XP-C77, was made in 1967 and ~~XP-B74~~ Bush Blue was developed by straight line selection from this cross. Individual single vine selections were made through the F_6 generation in 1972 when it was determined that the line was breeding true and that it was a distinct Bush Blue Lake type, worthy of increase and trial. Small increases were made in 1973 and again in 1974. The designation ~~XP-B74~~ Bush Blue Lake RIO was made in January 1975.

In 1974, 300 single plants were harvested separately and in 1975, the 300 progenies were grown as a final test of homozygosity. All progenies seemed to be identical, but any progenies which were suspect in any way were discarded. The remaining progenies were harvested as a bulk and this has become our Breeder's Seed.

~~XP-B74~~ Bush Blue Lake Rio is a true breeding, homozygous line. We have found no off types.

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JDA
5/9/77

Asgrow Seed Company
Garden Bean, ~~XP-B74~~ Bush Blue Lake RIO

7700068

EXHIBIT B--Novelty Statement Concerning ~~XP-B74~~ Bush Blue Lake RIO Garden Bean

To our knowledge, the Bean variety most similar to ~~XP-B74~~ Bush Blue Lake RIO is Bush Blue Lake 274. Comparative characteristics which make ~~XP-B74~~ Bush Blue Lake RIO a different variety include, but are not restricted to, the following:

1. ~~XP-B74~~ Bush Blue Lake RIO is four or five days earlier than Bush Blue Lake 274.
2. ~~XP-B74~~ Bush Blue Lake RIO produces smaller sieve pods than Bush Blue Lake 274.
3. ~~XP-B74~~ Bush Blue Lake RIO plants are smaller than those of Bush Blue Lake 274. In plots planted on the same day and growing practically side by side, the measurements were as follows:

	Height	Spread
~~XP-B74~~ Bush Blue Lake RIO	35 cm.	30 cm.
Bush Blue Lake 274	44 cm.	36 cm.

Following are data summarized from three years yield trials at Twin Falls, Idaho to support numbers one and two above. There was a sequence of once-over harvests which allowed us to correlate yield, sieve size, per cent seed, and fiber development. The sieve size was determined by grading the entire harvest in a commercial bean grader. The per cent seed was determined as part of the fiber test which requires 100 grams of deseeded pods. Samples are canned at harvest time and during the slack season, the fiber tests are conducted. The seeds obtained in preparing the 100 grams of deseeded pods are weighed and the per cent seed is then calculated. There was practically no fiber in any sample of any harvest of either variety. Therefore, fiber data are not included.

1974 DATA

	Bush Blue Lake 274				~~XP-B74~~ Bush Blue Lake RIO			
Harvest Date	Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's	% Seed 5's	Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's	% Seed 5's
8/3/74					6,600	12	5.9	7.4
8/5/74					8,800	17	5.4	8.5
8/6/74	5,600	29	2.4	6.5				
8/7/74					10,700	38	6.3	9.5
8/8/74	8,900	40		5.7				
8/9/74					11,300	28	7.8	14.9
8/10/74	9,300	50	3.4	6.1				
8/12/74					12,300	54	7.8	13.2
8/13/74	9,300	67	2.9	6.5				
8/14/74					13,600	54	13.4	13.4
8/15/74	14,200	72	3.8	7.4				

JDA
5/9/77

7700068

1975 DATA

Harvest Date	Bush Blue Lake 274 Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's & 5's		~~XP-B74~~ Bush Blue Lake RIO Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's & 5's	
8/2/75					5,900	30	---	7.8
8/4/75					6,700	37	---	9.1
8/6/75					7,400	42	6.5	12.3
8/8/75	6,400	55	---	7.4	9,000	52	5.7	11.5
8/10/75	8,000	69	---	8.7	10,000	47	7.4	12.3
8/12/75	9,200	74	3.1	7.0	12,300	50	8.3	13.0
8/14/75	10,700	72	2.9	7.8				
8/16/75	13,200	76	2.9	7.0				

1976 DATA

Harvest Date	Bush Blue Lake 274 Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's & 5's		~~XP-B74~~ Bush Blue Lake RIO Yield Lbs/Acre	% 5 Sieve & Over	% Seed 4's & 5's	
8/2/76					6,400	19	--	6.1
8/476	8,100	38	--	4.2	8,600	42	--	5.9
8/7/76	8,900	49	--	4.9	10,800	45	6.3	8.5
8/9/76	10,300	65	2.9	5.0	11,300	48	8.2	8.0
8/11/76	13,200	72	2.5	5.9	12,100	64	8.6	10.2

The above data demonstrate that ~~XP-B74~~ Bush Blue Lake RIO is indeed several days earlier than Bush Blue Lake 274. The first harvest was two to six days earlier depending on the year. Per cent seed has been found to be a good measure of maturity, and this certainly indicates that there is a very significant difference in maturity of the two lines.

It will also be noted that although Bush Blue Lake 274 often goes above 70%, five sieve and over at a relatively low seed per cent, ~~XP-B74~~ Bush Blue Lake RIO does not reach 50%, five sieve and over, unless the per cent seed is also getting quite high.

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JDA
5/9/77

~~XP-B74~~ Bush Blue Lake RIO

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-12 (10-2-72)

EXHIBIT C (Bean)

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

OBJECTIVE DESCRIPTION OF VARIETY

BEAN (*PHALEOLUS VULGARIS*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S): Asgrow Seed Company

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*): Kalamazoo, Michigan 49001

FOR OFFICIAL USE ONLY

PVPO NUMBER: 7700068

VARIETY NAME OR TEMPORARY DESIGNATION: Bush Blue Lake RIO ~~XP-B74~~

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. TYPE:

1 — 1 = SNAPBEAN 2 = GREEN SHELL 3 = DRY EDIBLE 4 = MULTIPURPOSE

2. SEASON AND REGION OF ADAPTABILITY IN THE U.S.:

2 — Grows best during: 1 = SPRING 2 = SUMMER 3 = FALL 4 = WINTER

6 — Best adapted in: 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST 5 = SOUTHWEST 6 = MOST REGIONS

3. MATURITY (*Days from seeding to first harvest*):

6 4 — GREEN PODS ___ — GREEN SHELLS ___ — DRY SEEDS

0 5 — NO. DAYS EARLIER THAN ---------- 7

___ — NO. DAYS LATER THAN ----------

JBT with 28 Sept 1977

1 = TENDERCROP 2 = KENTUCKY WONDER 3 = KINGHORN WAX 4 = WHITE KIDNEY 5 = MICHELITE 62 6 = DWARF HORTICULTURAL 7 = BUSH BLUE LAKE 8 = OTHER (*Specify*)

4. PLANT:

1 — 1 = DETERMINATE, ERECT BUSH 2 = DETERMINATE, SPRAWLING BUSH 3 = DETERMINATE, SEMIPOLE 4 = INDETERMINATE, POLE

0 3 5 — CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE

0 0 6 — NUMBER PRIMARY BRANCHES PER MAIN STALK

3 0 — CM. SPREAD

1 — Branching habit: 1 = COMPACT 2 = OPEN

0 5 — NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

0 2 — CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

0 8 — MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

2 — Main stalk: 1 = BRITTLE 2 = WIREY 1 — 1. STOUT 2. THIN

2 — Flower position:
2 — Pod Position:
1 = LOW, CONCENTRATED 2 = HIGH, CONCENTRATED 3 = SCATTERED

5. LEAVES:

2 — 1 = SMOOTH 2 = WRINKLED 1 — 1 = DULL 2 = GLOSSY 3 — Thickness: 1 = THIN 2 = MEDIUM 3 = THICK

3 — Size: 1 = SMALL (*Earliwax*) 2 = MEDIUM 3 = LARGE (*Tendercrop*) 12 — CM. PETIOLE LENGTH (*To basal leaflets of first trifoliate leaf*)

2 — Tip shape of center leaflet: 1 = ROUNDED 2 = TAPER POINTED 3 = SHARP POINTED

2 — PUBESCENCE - Dorsal:
2 — PUBESCENCE - Ventral:
1 = NONE 2 = SLIGHT 3 = CONSIDERABLE

3 — Color: 1 = LIGHT GREEN (*Bountiful*) 2 = MEDIUM GREEN 3 = DARK GREEN (*Bush Blue Lake*)

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6. FLOWERS:

[1] Color: 1 = WHITE 2 = CREAM 3 = PINK 4 = LILAC 5 = PURPLE 6 = OTHER (Specify)_____

[2] Racemes: 1 = LONG 2 = MEDIUM 3 = SHORT [3] NUMBER FLOWERS PER RACEME

7. FRESH PODS: (Edible maturity, averages for 10 pods)

[3] Color: 1 = LIGHT GREEN (Bountiful) 2 = MEDIUM GREEN (Tendergreen) 3 = DARK GREEN (Wade) 4 = LIGHT YELLOW (Brittlewax) 5 = GOLDEN YELLOW (Cherokee Wax) 6 = GREEN-RED VARIAGATED (Horticultural) 7 = OTHER (Specify) _____

[1 4] CM. LENGTH [9.2] MM. WIDTH (Between sutures) [9.9] MM. THICKNESS [9 3] WIDTH / THICKNESS X 10

[3] Cross section pod shape: 1 = FLAT 2 = OVAL 3 = CREASEBACK 4 = ROUND

[1] Curvature: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

[2] Pubescence: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE

[2] Constrictions: 1 = NONE 2 = SLIGHT 3 = DEEP

[3] Spur: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

[2] Surface: 1 = SHINY 2 = DULL

[1] Surface: 1 = SMOOTH 2 = BLISTERED

[2] Pod flesh: 1 = LIGHT 2 = DARK

[1] Pod flesh: 1 = FIRM 2 = WATERY

[18] MM. SPUR LENGTH

[2] Suture string: 1 = PRESENT 2 = ABSENT

[2] Fiber: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE

[2] Seed development: 1 = SLOW 2 = MEDIUM 3 = FAST

[ ] NUMBER OF SEEDS PER POD

[ ] NUMBER PODS PER PLANT (Once over harvest)

[ ] NUMBER MARKETABLE PODS PER PLANT (Once over harvest)

[1] Machine harvest: 1 = ADAPTED 2 = NOT ADAPTED

8. SEED COAT COLOR:

[1] 1 = MONOCHROME 2 = POLYCHROME

[1] 1 = SHINY 2 = DULL

[1] Primary color: 1 = WHITE 2 = YELLOW 3 = BUFF 4 = TAN 5 = BROWN 6 = PINK 7 = RED 8 = PURPLE

[ ] Secondary color: 9 = BLUE 10 = BLACK 11 = OTHER (Specify)_____

[ ] Color pattern: 1 = SPLASHED 2 = MOTTLED 3 = STRIPED 4 = FLECKED 5 = DOTTED

[ ] Secondary color location: 1 = HILAR RING 2 = HILAR SURFACE 3 = STROPHIOLE 4 = MICROPYLE 5 = SIDES 6 = DORSAL SURFACE 7 = NOT RESTRICTED TO ANY AREA 8 = COMBINATION OF LOCATIONS (Specify)_____

[1] Hilar ring: 1 = NOT PRESENT 2 = NARROW 3 = BUTTERFLY SHAPED

[1] Vein-like under coat pattern: 1 = ABSENT 2 = PRESENT

9. SEED SHAPE AND SIZE:

[1] Hilum view: 1 = ELLIPTICAL 2 = OVAL 3 = ROUND

[3] Side view: 1 = OVAL 2 = ROUND 3 = KIDNEY 4 = TRUNCATE ENDS

[4] Cross section: 1 = ELLIPTICAL 2 = OVAL 3 = CORDATE 4 = ROUND

[33] GM. WEIGHT PER 100 SEEDS

[4] Classification: 1 = PEA 2 = MEDIUM 3 = MARROW 4 = KIDNEY 5 = PINTO

[0 6] MM. WIDTH (Dorsal to ventral) [0 6] MM. THICKNESS (Side to side)

[1 5] MM. LENGTH [1 0 0] WIDTH / THICKNESS X 10

 ~~XP-B74~~ Bush Blue Lake RTO

7700068

10. ANTHOCYANIN: *(1 = Absent 2 = Present):*

[1] FLOWERS [1] STEMS [1] PODS [1] SEEDS [1] LEAVES

11. DISEASE RESISTANCE *(0 = Not tested; 1 = Susceptible; 2 = Resistant):*

[0]	RUST *(Specify race)* _____	[0]	ANGULAR LEAF SPOT
[0]	BACTERIAL WILT	[2]	COMMON BEAN MOSAIC
[0]	ANTHRACNOSE	[0]	YELLOW BEAN MOSAIC
[0]	SOUTHERN BEAN MOSAIC	[0]	FUSARIUM ROOT ROT
[0]	CURLY TOP	[2]	N.Y. 15 BEAN MOSAIC
[0]	POWDERY MILDEW	[0]	BEAN MOSAIC VIRUS 4
[0]	HALO BLIGHT	[0]	FUSCOUS BLIGHT
[0]	ALFALFA MOSAIC VIRUS	[0]	ALFALFA MOSAIC VIRUS 2
[0]	POD MOTTLE VIRUS	[0]	RED NODE VIRUS
[0]	ROOT KNOT NEMATODE	[0]	OTHER *(Specify)* _____

12. INSECT RESISTANCE: *(0 = Not tested; 1 = Susceptible; 2 = Resistant)*

[0]	APHIDS	[0]	LEAF HOPPERS
[0]	POD BORER	[0]	LYGUS
[0]	THRIPS	[0]	WEAVILS
[0]	SEED CORN MAGGOT	[0]	OTHER *(Specify)* _____

13. PHYSIOLOGICAL RESISTANCE: *(0 = Not tested; 1 = Susceptible; 2 = Resistant)*

[0] HEAT [0] COLD [0] DROUGHT [ ] OTHER *(Specify)* _____

REFERENCES: The following publications may be used as a reference in completing this form:

1. Beans of New York. Vol. 1 Part II of Vegetables of New York. U.P. Hedrick et al. J. B. Lyon Company, Albany, N.Y. 1931.
2. Yarnell, S. H., Cytogenetics of the Vegetable Crops IV. Legumes. Bot. Rev. 31:247 - 330. 1965.
3. USDA Yearbook of Agriculture. 1937.

COLOR: Nickerson's or any recognized color fan may be used to determine the colors.