No. 7600019

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Ferry-Morse 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, 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 (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'Aristocrop'

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* seventh *day of* September *in the year of our Lord one thousand nine hundred and* seventy-six

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

January 21, 1976

VARIETY: Aristocrop (formerly E4201 (formerly 1C-70GMs.4,9,17,21,23, 24,27,28MsMs (formerly 1C-X41Ms#1Ms10(W)A(C)Ms)))

Revised Exhibit A: Origin and Breeding History of the Variety

E4201 was selected as a single plant selection involving the pedigree method of breeding, from a cross (1C-X41) made in 1966 between Asgrow BBL 274 as the seed parent and Avalanche as the pollen parent.

F_2 seed was harvested from two F_1 plants grown in the greenhouse in the spring of 1967. F_3 seed was bulked-massed from the F_2 segregating progeny row grown in California in the summer of 1967. In 1968 F_4 seed was harvested separately from selections made from the F_3 segregating progeny row in California. The F_4 progeny rows of these plants were planted in Wisconsin in the summer of 1969; F_5 seed was harvested from 2 selections in the progeny row of the "10"th F_3 selection. In 1970 in California the F_5 progeny row of the "10-A" F_4 single plant selection was redesignated 1C-70 in anticipation of commercial sampling of the line in 1971, F_6 seed was harvested separately from nine F_5 selections and seed from the remaining F_5 plants was bulk-massed. The F_6 bulk-mass carrying the designation of 1C-70 was found in 1971 to have low seed vigor and work with 1C-70 was carried no further.

F_7 seed was harvested from the 1C-70C F_6 progeny row in 1971 and was planted in trial in Wisconsin and for seed increase in California in 1972. Both the California and Wisconsin F_7 progeny rows performed outstandingly well, except for the presence of an occasional "U.S. No.5 Refugee[1]"-type variegated plant. The decision to increase this line as a possible new variety was decided August 24, 1972. F_8 seed was harvested separately from 30 F_7 selections to attempt to select away from the variegation and was bulk-massed from the remaining 195 plants. Among the 230 F_7 plants no plants with off type pods were observed, 5 plants with variegated leaves were removed.

In California in 1973 from the 30 F_8 progeny rows 8 were noted as outstanding in yield potential and pod type over the other rows and free of variegated plants. F_9 seed was harvested and planted separately in trial in Wisconsin and for increase in California in the summer of 1974. All of the F_9 progeny rows performed equally well and all had a low frequency ($\pm$2%) of variegated plants. F_{10} seed from the 8 F_9 progeny rows was bulked together to be used as the foundation seed for Aristocrop.

Plants of Aristocrop tested homozygous resistant to the New York Strain of common bean mosaic (BV-1A) in a greenhouse test ran during the winter of 1974-75 at Columbus, Wisconsin.

[1] Wade, B.L.1941. Genetic studies of variegation in snap beans. Jour Agr. Res. 63:661-669.

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 ARISTOCROP	2. KIND NAME SNAP BEAN	FOR OFFICIAL USE ONLY PVPO NUMBER 7600019	
3. GENUS AND SPECIES NAME Phaseolus vulgaris L.	4. FAMILY NAME *(Botanical)* Leguminosae	FILING DATE 11·26·75	TIME 11 A.M.
	5. DATE OF DETERMINATION 20 August 1970	FEE RECEIVED $ 750	CHARGES —
6. NAME OF APPLICANT(S) FERRY-MORSE SEED COMPANY Dr. George C. Emery, Breeder	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* P. O. BOX 100 111 FERRY-MORSE WAY MOUNTAIN VIEW, CA 94040		8. TELEPHONE AREA CODE AND NUMBER (415) 967-6973

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Corporation	10. STATE OF INCORPORATION California	11. DATE OF INCORPORATION 7 April 1969

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

Mr. D. V. Brondyke, Executive Vice President
Ferry-Morse Seed Company
P. O. Box 100, 111 Ferry-Morse Way
Mountain View, California 94042

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

Jef [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.)* [ ] YES [X] NO

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed?

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).

11/21/75
(DATE)

Ferry-Morse Seed Company
(SIGNATURE OF APPLICANT)

00001

(DATE)

D V Brondyke
(SIGNATURE OF APPLICANT)

January 21, 1976

VARIETY: Aristocrop (formerly E4201 (formerly 1C-70GMs.4,9,17,21,23, 24,27,28MsMs (formerly 1C-X41Ms#1Ms10(W)A(C)Ms)))

Revised Exhibit B: Botanical Description of the Variety

Seed germination and emergence are moderately rapid, early seedling growth vigorous. Time of flowering is one to two days ahead of Tendercrop. Pods attain their mature diameter one day earlier than Tendercrop. Seed and fiber development are slow and similar in rate to Tendercrop.

Plants are determinate, bush, erect, medium tall (38 to 42 cm.) with a medium spread. The mature plant is similar in height to Tendercrop, but with a darker green foliage. The leaves are deltoid ovate, acuminate, with rounded or truncate bases. Occasional variegated leaflets occur as described in the variety, U.S. No.5 Refugee[1]. Stems and leaves are slightly pubescent. Inflorescences arise from the apex and leaf axils and contain 4 to 8 white flower buds. Pods are borne medium high in plant and rarely touch the soil surface.

Pods are stringless, 13 to 19 cm. in length, round to slightly crease-back, 10 mm in width (suture to suture), and 12 mm. in thickness. The neck (4 cm. from stem attachment to middle of 1st seed) and spur. (13 mm.) are medium in length. The pod surface is smooth and slightly pubescent. Pod color is a uniform medium blue green. Compared to Tendercrop the pods average 1 to 2 centimeters long, are smoother, with a shorter spur, slightly lighter green in color.

The seeds are shite, oblong, oval in cross-section and smaller in size than Tendercrop.

[1] Wade, B.L.1941. Genetic studies of variegation in snap beans. Jour Agr. Res. 63:661-669.

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-12
(11-15-72)

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) FERRY-MORSE SEED COMPANY
GEORGE C. EMERY, PLANT BREEDER

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
P. O. BOX 100
111 FERRY-MORSE WAY
MOUNTAIN VIEW, CA 94042

FOR OFFICIAL USE ONLY

PVPO NUMBER
7600019

VARIETY NAME OR TEMPORARY DESIGNATION
ARISTOCROP (E4201)

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):***

[5][3] GREEN PODS [ ][ ] GREEN SHELLS [ ][ ] DRY SEEDS

[0][1] NO. DAYS EARLIER THAN --------- [1]
[0][4] NO. DAYS LATER THAN ---------- [7]

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][9] CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE

[0][0][4] NUMBER PRIMARY BRANCHES PER MAIN STALK

[4][6] CM. SPREAD

[1] Branching habit: 1 = COMPACT 2 = OPEN

[0][6] NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

[0][1] CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

[0][8] MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

[1] 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:

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

[3] Size: 1 = SMALL *(Earliwax)* 2 = MEDIUM 3 = LARGE *(Tendercrop)*

[13] 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

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

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June 21, 1976

Variety: Aristocrop (formerly E4201 (formerly 1C-70GMs4,9,17,21,23,24 27,28MsMs (formerly 1C-X41Ms#1Ms10(W)A(C)Ms)))

(Revised) Exhibit D: Data Indicative of Novelty

Aristocrop most closely resembles the variety Bluecrop. It is distinct from Bluecrop by flowering earlier and having a shorter seed length.

	Aristocrop	Bluecrop	$\bar{d}$	$s\bar{d}$
Days to flower* (planted January 27, 1975 in a greenhouse held at a minimum 68° Fahrenheit at Columbus, Wisconsin).	41 days	43 days	2.1	.541

* the measurements are based on 10 paired comparisons.

Seed Length+ (seed grown under comparable conditions on Flint Ranch, San Juan Bautista, California).	12.71 mm	13.53 mm	.88 mm	.083

\+ the measurements are based on 200 paired comparisons.

EXHIBIT "E"

Plant Variety Protection Application

No: 7600019

ASSIGNMENT

I, DR. GEORGE C. EMERY, agree and hereby do transfer and assign to FERRY-MORSE SEED COMPANY all of my rights, title, and interest in and to that certain variety namely, Snap Bean, ARISTOCROP, for which application for Plant Variety Protection Certificate has been filed. This agreement shall be binding on my administrators, successors and assigns.

In Witness Whereof, I have executed this agreement this 20 day of October, 19 75.

BREEDER

George C. Emery

00008 12/72

ASSIGNMENT OF INTELLECTUAL PROPERTY

WHEREAS, HARRIS MORAN SEED COMPANY, a corporation duly organized and existing under the laws of the State of Maryland, having its principal place of business at 4511 Willow Road, Suite 3, Pleasanton, California 94588 ("**Assignor**"), has, pursuant to that certain Bill of Sale and Assignment dated as of June 30, 1997, transferred to FERRY-MORSE SEED COMPANY (CALIFORNIA), a corporation duly organized and existing under the laws of the State of California, having its principal place of business at 555 Codoni Avenue, P.O. Box 4938, Modesto, California 95352-4938 ("**Assignee**"), all of the intellectual property Assignor had adopted, used and was using as of the effective date of this Assignment, including without limitation, the intellectual property represented by the United States Plant Variety Protection Certificates of Assignor identified on Schedule A hereto (collectively, the "**Property**"); and

WHEREAS, on the date hereof, Assignee has changed its name to "Harris Moran Seed Company";

NOW, THEREFORE, effective by this instrument as of the close of business on June 30, 1997, and for good and valuable consideration, receipt of which is hereby acknowledged, Assignor hereby assigns to Assignee any and all right, title and interest worldwide in and to the Property and any and all recordations thereof, including, but not limited to, the use of the Property in any manner, all benefit of any and all prior use of the Property, and any and all rights to initiate claims or proceedings for past, present or future infringements of Assignor's rights, title and interest in and to the Property.

Dated: as of June 30, 1997

HARRIS MORAN SEED COMPANY

By: _____
Philip Ashcraft, President

NEWY01A:171511:1:09/26/97
26757-1

A496570

ENDORSED
FILED
In the office of the Secretary of State
of the State of California

JUN 30 1997

BILL JONES, Secretary of State

CERTIFICATE OF AMENDMENT

OF THE

ARTICLES OF INCORPORATION

OF

FERRY-MORSE SEED COMPANY (CALIFORNIA)
(a California corporation)

To the Secretary of State
State of California

Pursuant to the provisions of the General Corporation Law of the State of California, the undersigned officers of FERRY-MORSE SEED COMPANY (CALIFORNIA), a California corporation (the "Corporation"), do hereby certify as follows:

1. The name of the Corporation is Ferry-Morse Seed Company (California).

2. Article One of the Corporation's Articles of Incorporation, which relates to the name of the Corporation, is hereby amended in its entirety to read as follows:

One. The name of this Corporation is:
HARRIS MORAN SEED COMPANY.

3. The amendment herein provided for has been approved by the Corporation's Board of Directors.

4. The amendment herein provided for was approved by the written consent of the Corporation's sole shareholder in accordance with the provisions of Section 902 of the California General Corporation Law. The total number of outstanding shares of the corporation is 5,000.

IN WITNESS WHEREOF, each of the undersigned does hereby declare under the penalty of perjury that he or she signed the foregoing Certificate of Amendment as of June 30,

1997, in the Town of Modesto, State of California, in the official capacity set forth beneath his or her signature and that the statements set forth in this certificate are true of his or her own knowledge.

Yves Queste, President

Helen Andritsakis, Secretary

NEWY01A:163794:1:06/25/97
26757-1

FORM GR-470 (REVERSE)

RECEIVED NOV 26 1975

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.

A493976

State of California

SECRETARY OF STATE

OFFICE OF THE SECRETARY OF STATE

VB

2 PAGES

I, *BILL JONES*, Secretary of State of the State of California, hereby certify:

That the attached transcript has been compared with the record on file in this office, of which it purports to be a copy, and that it is full, true and correct.

IN WITNESS WHEREOF, I execute this certificate and affix the Great Seal of the State of California this

JUN 30 1997

THE GREAT SEAL OF THE STATE OF CALIFORNIA

EUREKA

Bill Jones

Secretary of State

SEC/STATE FORM CE-107 (REV. 4/97)

97 35085

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-12 (11-15-72)

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) FERRY-MORSE SEED COMPANY
GEORGE C. EMERY, PLANT BREEDER

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
P. O. BOX 100
111 FERRY-MORSE WAY
MOUNTAIN VIEW, CA 94042

FOR OFFICIAL USE ONLY

PVPO NUMBER 7600019

VARIETY NAME OR TEMPORARY DESIGNATION ARISTOCROP (E4201)

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):*

[5][3] GREEN PODS [ ][ ] GREEN SHELLS [ ][ ] DRY SEEDS

[0][1] NO. DAYS EARLIER THAN --------- [1]
[0][4] NO. DAYS LATER THAN ---------- [7]

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][9] CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE

[0][0][4] NUMBER PRIMARY BRANCHES PER MAIN STALK

[4][6] CM. SPREAD

[1] Branching habit: 1 = COMPACT 2 = OPEN

[0][6] NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

[0][1] CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

[0][8] MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

[1] 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:

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

[3] Size: 1 = SMALL *(Earliwax)* 2 = MEDIUM 3 = LARGE *(Tendercrop)* [13] 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

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

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4 of 5

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 [6] NUMBER FLOWERS PER RACEME

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

[2] 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 8] CM. LENGTH [1 0] MM. WIDTH *(Between sutures)* [1 3] MM. THICKNESS [0 8] 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

[2] 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

[13] MM. SPUR LENGTH

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

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

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

[7] NUMBER OF SEEDS PER POD

[22] NUMBER PODS PER PLANT *(Once over harvest)*

[17] 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

[2] 1 = SHINY 2 = DULL

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

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

[ ] 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 5] MM. WIDTH *(Dorsal to ventral)*

[0 5] MM. THICKNESS *(Side to side)*

00005

[1 2] MM. LENGTH

[0 1 1] WIDTH / THICKNESS X 10

5 of 8

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	0 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.