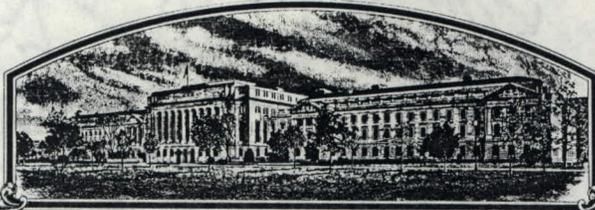


No.

8700024



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

BEAN

'Stiletto'



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 31st day of December in the year of our Lord one thousand nine hundred and ninety.

Attest:

*Kenneth H. Evans*  
Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

*Clayton Fetter*  
Secretary of Agriculture

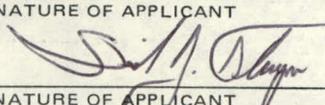
U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 WAREHOUSE & SEED DIVISION

FORM APPROVED: OMB NO. 0581-0055

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).

**APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE**

(Instructions on reverse)

1. NAME OF APPLICANT(S)  FERRY-MORSE SEED COMPANY		2. TEMPORARY DESIGNATION  FM-111	3. VARIETY NAME  STILETTO
4. ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P.O. BOX 4938 MODESTO CALIFORNIA 95352-4938		5. PHONE (Include area code)  (209) 579-7333	
6. GENUS AND SPECIES NAME  PHASEOLUS VULGARIS L.		7. FAMILY NAME (Botanical)  LEGUMINOSAE	
8. KIND NAME  GARDEN BEAN		9. DATE OF DETERMINATION  OCTOBER, 1986	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)  CORPORATION		FILING DATE <u>November 25, 1986</u> TIME <u>5:30</u> <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M.	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION  CALIFORNIA		12. DATE OF INCORPORATION  4 APRIL 1969	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS DR. DAVID J. THOMPSON, PRESIDENT FERRY-MORSE SEED COMPANY P.O. BOX 4938 MODESTO, CALIFORNIA 95352-4938 PHONE (Include area code): (209) 579-7333			
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED			
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)		c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.)	
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement		d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of the Variety	
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.)			
<input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? N/A <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified	
18. DID THE APPLICANT(S) FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?			
<input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No			
19. HAS THE VARIETY BEEN OFFERED FOR SALE OR MARKETED IN THE U.S. OR OTHER COUNTRIES?  COSTA RICA, APRIL, 1986			
<input checked="" type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input type="checkbox"/> 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 		DATE 17 OCTOBER 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, Warehouse and Seed Division, 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.
- 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.)
- 16 See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



VARIETY: Stiletto (formerly FM-111(formerly 1D-111(formerly 1D-X277-  
Ms(F)D(T)Ms(MT)3A(T)Ms(C)Ms)

EXHIBIT A: Origin and Breeding History of the Variety

Stiletto originated as a  $F_6$  selection, following the pedigree method of breeding, from the cross designated 1D-X277. The seed parent, pedigreed line 1C-X1299-Ms4E(W)Ms, was crossed with pollen from Redlands Greenleaf C, an Australian variety and a source of wide spectrum resistance to rust (Uromyces appendiculatus). 1D-X277 cross was made in the field at Sun Prairie, Wisconsin, in the summer of 1975. Three  $F_3$  seeds were planted to the field at Sun Prairie, Wisconsin, in the summer of 1976, and resulting  $F_2$  seed, 1D-X277-Ms, was bulk-massed.

$F_2$  seed was planted in Homestead, Florida, in the spring of 1977 and 9 single plant selections made;  $F_3$  seed 1D-X277-Ms(F)A to J was kept separate.

Progeny rows of  $F_3$  seed were planted in Crossville, Tennessee, in the late summer of 1977. 1D-X277-Ms(F)D progeny row was free of rust, and  $F_4$  seed 1D-X277-Ms(F)D(T)Ms was bulk massed from the row.

$F_4$  seed was planted in the greenhouse at Sun Prairie, Wisconsin in the fall of 1977. Following a modified "single seed descent", 3  $F_4$  plants were carried through two seed generations in the greenhouse in the fall of 1977 and the spring of 1978, producing  $F_6$  seed of three lines: 1D-X277-Ms(F)D(T)Ms(MT)1A,2A, and 3A. Each generation the plants were inoculated with and selected for resistance to CBMV, New York 15 strain.

Progeny rows of the 3  $F_6$  lines were planted in a field at Crossville, Tennessee, in the late summer of 1979. Progeny row 1D-X277-Ms(F)D(T)Ms(MT)3A was completely free of rust and rated outstanding for its early maturity and straight, smooth, round pods.  $F_7$  seed, 1D-X277-Ms(F)D(T)Ms(MT)3A(T)Ms, was bulk-massed from the row.

For another generation of seed multiplication,  $F_7$  seed was planted in the greenhouse in the winter/spring of 1980 at Sun Prairie, Wisconsin; all 50  $F_7$  plants tested resistant to CBMV-New York 15 and their  $F_8$  seed, 1D-X277-Ms(F)D(T)Ms(MT)3A(T)Ms(MT)Ms, bulk-massed.

$F_8$  seed was planted in 30 foot double row bed-plot at San Juan Bautista, California, in the summer of 1980. The plot was very good for its upright habit; high pod height; 6-7 inch, round, smooth pods. The  $F_9$  seed, 1D-X277-Ms(F)D(T)Ms(MT)3A(T)Ms(C)Ms was bulk-massed.

$F_9$  seed was trial planted in Homestead, Florida, in the fall of 1980 and rated very good for its plant and pod characteristics. The decision was made to further test and increase the line as a possible new variety and the  $F_9$  seed was designated 1D-111 (FM-111 when sampled outside the company).

Trials of 1D-111 in 1981 in Sun Prairie, Wisconsin, and Crossville, Tennessee, rated very good for earliness and pod characters; no rust was

observed.  $F_{10}$  seed was produced on a 400 foot double row bed-plot at San Juan Bautista, California; the plants rated well for earliness, upright habit, and long attractive pods; no off types were found in approximately 2500 plants indicating good genetic stability and reproducibility of the line.

Trials of 1D-111  $F_{10}$  seed in 1982 were grown in Sun Prairie, Wisconsin; Geneva, New York; and Crossville, Tennessee. 1D-111 rated well in all trials and remained rust free. No seed production was made in 1982.

Evaluation trials in 1983 were grown in Hansen, Idaho; Sun Prairie, Wisconsin; Geneva, New York; and Crossville, Tennessee. 1D-111 rated good in all trials and remained free of rust. 1D-111  $F_{11}$  seed was produced in 550 foot double row bed-plot; among 3500 plants no off types were noted again indicating good genetic stability and reproducibility of the line.

The rust resistance level of 1D-111 was evaluated by J. Rennie Stavely, Research Plant Pathologist, Plant Pathology Laboratory, U.S.D.A.-A.R.S., at the Beltsville, MD., Research Center in 1983. His research concluded that FM-111 was highly resistant to races 38, 39, 49, 51; resistant to races 40, 50, 52, 56; moderately susceptible to races 41 and 46; but was not susceptible or very susceptible to any of the ten tested races.

In 1984 the decision was made and carried out to produce 1D-111  $F_{12}$  seed for sampling through our Marketing Department. 0.5 acre was planted at San Juan Bautista, California. Small plot trials continued at Sun Prairie, Wisconsin; Geneva, New York; Salem, Oregon; Crossville, Tennessee; and Homestead, Florida and good ratings were obtained. In California the seed production field rated good; 4 oval-podded and 7 bumpy podded off type plants were rogued from approximately 35,000 plants. It was concluded that 1D-111 was genetically stable and reproducible and the  $F_{12}$  seed would serve as stock seed for the variety.

FM-111 was named Stiletto and introduced as a new variety in October, 1986.

VARIETY: Stiletto (formerly FM-111(formerly 1D-111(formerly 1D-X277-  
Ms (F)D(T)Ms (MT) 3A(T)Ms (C)Ms).

EXHIBIT B: Data Indicative of Novelty

Stiletto most closely resembles the variety, Contender, but is distinct from Contender in pod shape, being round podded whereas Contender has oval-flat pods, i.e. Stiletto has a narrower "suture to suture" diameter but a similar crosswall diameter compared to Contender. Stiletto also has brown colored seed compared to a cinnamon color for Contender.

I. Measurements were taken on pods from plants growing in a special trial planted in the field on July 7, 1984, at San Juan Bautista, California.

	<u>Stiletto</u>	<u>Contender</u>	<u>d</u>	<u>t</u>	<u>p</u>
a. pod width (mm) (suture to suture)	9.85	11.44	1.59	17.52	<.001

(100 measurements for each variety)

II. Measurements were taken on pods from plants growing in a special trial planted in the field on June 29, 1984, at Sun Prairie, Wisconsin.

	<u>Stiletto</u>	<u>Contender</u>	<u>d</u>	<u>t</u>	<u>p</u>
a. pod width (mm) (suture to suture)	10.48	11.19	0.71	3.54	<.001

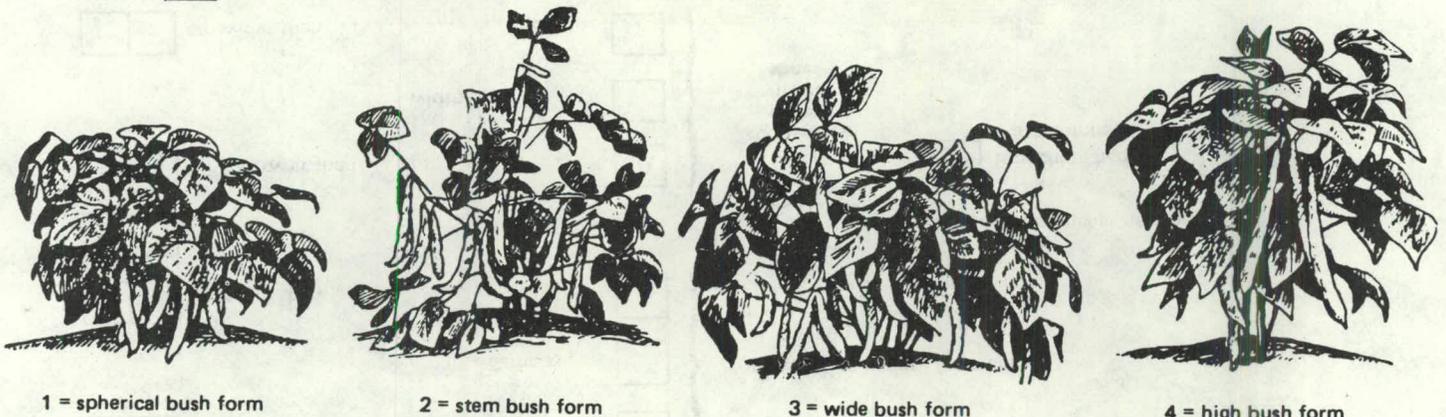
(100 measurements for each variety)



3. PLANT: (Cont'd)

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

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:

1 = smooth 2 = wrinkled

1 = dull 2 = glossy

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

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:

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

Days to 50% bloom

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

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
0	3	9	19	38	31

3 sieve	<input type="text" value="1"/> <input type="text" value="3"/> cm length	<input type="text" value="0"/> <input type="text" value="9"/> mm width	<input type="text" value="0"/> <input type="text" value="8"/> mm thickness
4 sieve	<input type="text" value="1"/> <input type="text" value="5"/> cm length	<input type="text" value="0"/> <input type="text" value="9"/> mm width	<input type="text" value="0"/> <input type="text" value="9"/> mm thickness
5 sieve	<input type="text" value="1"/> <input type="text" value="6"/> cm length	<input type="text" value="1"/> <input type="text" value="0"/> mm width	<input type="text" value="1"/> <input type="text" value="0"/> mm thickness
6 sieve	<input type="text" value="1"/> <input type="text" value="8"/> cm length	<input type="text" value="1"/> <input type="text" value="1"/> mm width	<input type="text" value="1"/> <input type="text" value="1"/> mm thickness

6. FRESH PODS: (Cont'd)

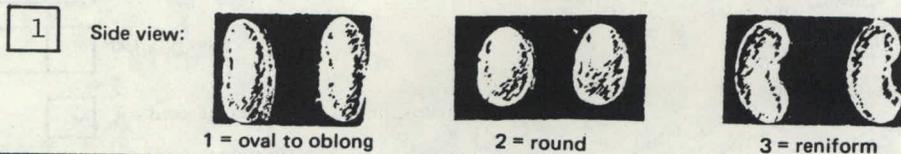
- 3 Cross section pod shape: 1 = flat 2 = oval 3 = round 4 = heart
- 2 Creaseback: 1 = present 2 = absent
- 3 Pubescence: 1 = none 2 = sparse 3 = considerable
- 2 Spur: 1 = straight 2 = slightly curved 3 = curved
- 2 Constrictions: 1 = none 2 = slight 3 = deep
- 1 Pod flesh: 1 = light 2 = medium 3 = dark
- 1  2 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
- 5 Primary color: } 1 = white 2 = yellow 3 = buff 4 = tan
- 0 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
- 0 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) \_\_\_\_\_
- 1 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



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

2 1 = truncate ends 2 = rounded ends

2  8 gm/100 seed

0  6 gm/100 seed lighter than .....  1

gm/100 seed same as ....

comparison variety from page one

gm/100 seed heavier than .....

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

2 Flowers

0 Stems

0 Pods

2 Seeds

0 Leaves

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

0 Anthracnose (specify race below) \_\_\_\_\_

0 Fuscous blight

2 Rust (specify race below)  
38,39,49,51,40,50,52,56

0 Red node virus

0 Powdery mildew

0 Pod mottle virus

0 Fusarium root rot

2 Bean common mosaic virus (specify strain below)  
CBMV-NY15

0 Pythium root rot

2 Mosaic mottle

0 Rhizoctonia root rot

2 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

0 Other (specify below) \_\_\_\_\_

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

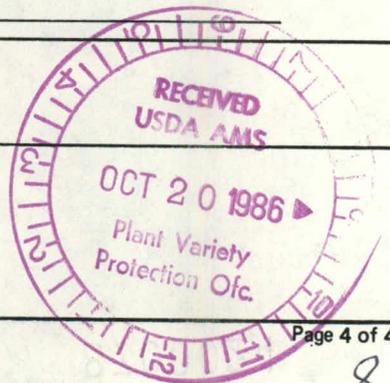
0 Heat

0 Cold

0 Drought

0 Air pollution

13. COMMENTS:



8700024

VARIETY: Stiletto (formerly FM-111(formerly 1D-111(formerly 1D-X277-Ms  
(F)D(T)Ms (MT) 3A(T)Ms (C)Ms)

EXHIBIT D: Botanical Description of the Variety

Seed germination and seedling emergence is rapid and vigorous.

Flower color is a light lavender pink; flowering is early and relatively concentrated.

Leaves are medium to large in size, medium to sparse in number, deltoid ovate in shape with rounded or truncated bases, medium dark green in color.

Bush is upright, medium height, medium well-anchored.

Edible pod maturity is medium early and concentrated into a short period; yield is medium heavy.

Pods are 14 to 17 cm in length, 10-11 mm from crosswall to crosswall, straight to slight curving, smooth, round, well-filled, medium green, with a 9 to 14 mm medium straight spur. Pod maturation to a dry seed stage is rapid.

Seed are brown, oblong, round in cross-section.

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EXHIBIT "E"

Plant Variety Protection Application

No: 8700024

STATEMENT OF OWNERSHIP

I, George R. Allbritten, Secretary of Ferry-Morse Seed Company do hereby certify that Ferry-Morse Seed Company is the breeder and owner of that certain variety namely, Bean, Stiletto

\_\_\_\_\_ for which an application for Plant Variety Protection has been filed.

In witness whereof I have executed this statement of ownership and caused the Ferry-Morse Corporate Seal to be affixed this 27 day of April, 1990.

  
Secretary

SEAL



8700024

EXHIBIT "E"

Plant Variety Protection Application

No: 8700024

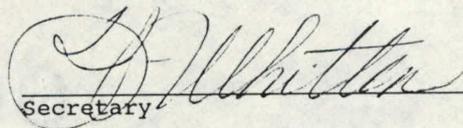
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SEAL

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