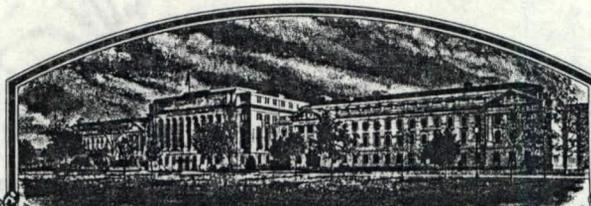


No.

8300095



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Ferry-Morse Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

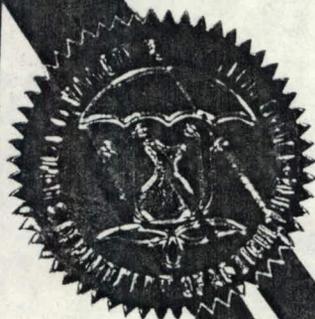
Secretary of Agriculture

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 (P.L. 85-623, 70 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BEAN

'Sundial'



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 May in the year of our Lord one thousand nine hundred and eighty-six.

Attest:

Kenneth Howard
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

5501



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APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

INSTRUCTIONS: See Reverse.

1a. TEMPORARY DESIGNATION OF VARIETY E1204		1b. VARIETY NAME SUNRISE SUNDIAL <i>njs</i> 4/6/83		FOR OFFICIAL USE ONLY	
2. KIND NAME GARDEN BEAN		3. GENUS AND SPECIES NAME PHASEOLUS VULGARIS L.		PV NUMBER 8300095	
4. FAMILY NAME (BOTANICAL) LEGUMINOSAE		5. DATE OF DETERMINATION JANUARY 1982		FILING DATE 3/28/83 TIME 9:30 PM	
6. NAME OF APPLICANT(S) FERRY-MORSE SEED COMPANY		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) P.O. DRAWER 7274 Box 4938 MOUNTAIN VIEW MODESTO CALIFORNIA 94039 95352-4938		8. TELEPHONE AREA CODE AND NUMBER (415) 967-6973 (209) 579-7333	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) CORPORATION		10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION CALIFORNIA		11. DATE OF INCORPORATION 4 APRIL 1969	
12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS: Dr. David Thompson, Vice President FERRY-MORSE SEED COMPANY P.O. DRAWER 7274 , MOUNTAIN VIEW , CALIFORNIA 94039					

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)

13B. Exhibit B, Novelty Statement.

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 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

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? YES NO (If "Yes," give name of countries and dates.)

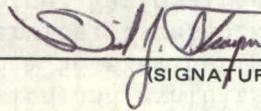
16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? YES NO

17. The applicant(s) declare(s) that a viable sample of basic seed 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 Act.

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

12 February 1983
 (DATE)


 (SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and \$500 fee (\$250 filing fee and \$250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain 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

- 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 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.
- 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, 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.)
- 15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.



VARIETY: SUNDIAL *Rfs 4/6/83*
Sunrise (formerly E1204 (formerly 1D-86(C)Ms
 (formerly 1C-X2185-(W)MsMsH(MT)1(W)Ms)))

EXHIBIT A: Origin and Breeding History of the Variety

SUNDIAL
Sunrise was selected as a F₅ single plant selection, utilizing the pedigree method of breeding, from the cross 1C-X2185. Cross 1C-X2185 was made in July 1974 in the greenhouse at San Juan Bautista, California, between the wax bean E4204 as the seed parent and the green-podded variety, Plateau Provider, as the pollen parent.

One F₁ seed was obtained and planted in the field in Columbus, Wisconsin in the summer of 1975. The resulting F₂ seed 1C-X2185-(W)Ms was planted to a progeny row in Wisconsin in 1976; the row rated very good for straight, smooth medium long pods on upright plants. Three single plants with wax pods were selected and the F₃ seed of the three selections was bulk-massed.

In the summer of 1977 the F₃ bulk-massed, 1C-X2185-(W)MsMs, was planted back to field in Columbus, Wisconsin; the row rated excellent for good concentration of maturity, heavy yield, 14.5 cm. long pod with a slender (11 mm x 11 mm) diameter. Eight selections were made in the row.

F₄ seed of the eight selections was planted and grown in the Columbus, Wisconsin, greenhouse in the winter of 1977-78 and tested for resistance to common bean mosaic virus New York Strain (BV-1A).

F₅ seed of the individual resistant plants was kept separate and planted back to the field at Columbus, Wisconsin, in the summer of 1978. The row of 1C-X2185-(W)MsMsH(MT)1 plants was rated outstanding for upright habit, good concentration of maturity, heavy yield with 5½ inch, medium slim, well-filled wax pods. F₆ seed from the plants in the row was bulk-massed.

The decision to increase this line as a potential new line was made in the winter of 1978-79; 1C-X2185-(W)MsMsH(MT)1(W)Ms was redesignated 1D-86. A sixty foot row of seed was grown for seed increase in California in 1979; the row was rated excellent for a high pod height, very good concentration of maturity, and heavy yield. No off types were noted among approximately 500 plants.

In 1980 a further increase of one 400 foot bed was grown in San Juan Bautista, California while the line was being evaluated in field trials in Wisconsin, New York, and Oregon. The California row rated very good for early maturity; off type frequency was one flat-oval podded plant per hundred plants. Wisconsin, Oregon, and New York trials rated 1D-86 rate fair to poor for medium to late maturity.

VALENTY, Dennis (formerly ID-86(C) Ms
(formerly IC-X2185-(W)MaMaH(MT)I(W)Ms))

EXHIBIT A: Origin and Breeding History of the Variety

Garner was selected as a P₂ single plant selection, utilizing the pedigree method of breeding, from the cross IC-X2185-Cross IC-X2185 was made in July 1974 in the greenhouse at San Juan Bautista, California, between the wax bean F1304 as the seed parent and the green-podded variety, P1304 provider, as the pollen parent.

One F₁ seed was obtained and planted in the field in Columbus, Wisconsin in the summer of 1975. The resulting F₂ seed IC-X2185-(W)Ms was planted to a progeny row in Wisconsin in 1976; the row rated very good for straight, smooth medium long pods on upright plants. Three single plants with wax pods were selected and the F₃ seed of the three selections was bulk-massed.

In the summer of 1977 the F₃ bulk-massed, IC-X2185-(W)MaMa was planted back to field in Columbus, Wisconsin; the row rated excellent for good concentration of maturity, heavy yield, 14.5 cm long pod with a slender (11 mm x 11 mm) diameter. Right selections were made in the row.

F₄ seed of the eight selections was planted and grown in the Columbus, Wisconsin, greenhouse in the winter of 1977-78 and tested for resistance to common bean mosaic virus New York Strain (BV-1A).

F₅ seed of the individual resistant plants was kept separate and planted back to the field at Columbus, Wisconsin, in the summer of 1978. The row of IC-X2185-(W)MaMaH(MT)I plants was rated outstanding for upright habit, good concentration of maturity, heavy yield with 2 1/2 inch, medium slim, well-filled wax pods. F₅ seed from the plants in the row was bulk-massed.

The decision to increase this line as a potential new line was made in the winter of 1978-79; IC-X2185-(W)MaMaH(MT)I Ms was redesignated ID-86. A sixty foot row of seed was grown for seed increase in California in 1979; the row was rated excellent for a high pod height, very good concentration of maturity, and heavy yield. No off types were noted among approximately 500 plants.

In 1980 further increase of one 400 foot bed was grown in San Juan Bautista, California while the line was being evaluated in trials in Wisconsin, New York, and Oregon. The California row rated very good for early maturity; off type plants were one flat-oval podded plant per hundred plants in Wisconsin, Oregon, and New York trials rated ID-86 for medium to late maturity.

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Exh. A pg 2.

The decision to increase 1D-86 as a new variety was made in the spring of 1981; it was given an experimental designation of E1204. E1204 seed was again increased in San Juan Bautista, California in the summer of 1981 while being further evaluated in trials in Wisconsin, New York, Oregon, and Tennessee. The five 400 foot beds of E1204 grown in California rated good to very good and no off types were noted. The trials in New York, Tennessee, and Oregon all rated very good, only the Wisconsin trial rated good.

The decision to introduce E1204 as a new early maturing wax bean was made in the winter of 1981-82 and the variety was named Sunrise.

SUNDIAL. rfs

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The decision to increase ID-86 as a new variety was made in the spring of 1981; it was given an experimental designation of E1204. E1204 seed was again increased in San Juan Bautista, California in the summer of 1981 while being further evaluated in trials in Wisconsin, New York, Oregon, and Tennessee. The five 500 foot beds of E1204 grown in California rated good to very good and no off types were noted. The trials in New York, Tennessee, and Oregon all rated very good, only the Wisconsin trial rated good.

The decision to introduce E1204 as a new early maturing wax bean was made in the winter of 1981-82 and the variety was named Swissie.

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VARIETY: Sundial (formerly E1204 (formerly 1D-86-(C)Ms)

EXHIBIT A: Origin and Breeding History of the Variety

ADDENDUM: Stability and Uniformity of the Variety

The F_8 generation was considered stable and uniform and E1204 could be increased and tested as a new variety in 1981.

F_9 seed was bulkmassed from the five 400 foot beds of Sundial grown in California in the summer of 1981 and was used for the foundation seed for the variety.

The F_9 seed was planted in a 1 acre increase at San Juan Bautista, California in 1982. Some green-podded mixtures were observed and carefully rogued from the field before harvesting the F_{10} seed.

The F_{10} seed was designated C2831-10507 and was shipped to Idaho as Select Stock Seed in spring of 1983. Seven acres of seed were grown in 1983. The seed field was quite free of visible off-types. The harvested F_{11} seed was designated H3007-10507 and utilized as Stock Seed for 1984 seed production. The trial grounds test of H3007-10507 indicated it free of off types and mixtures in approximately 100 plants.

The F_{11} was planted back to 22 acres of seed production in 1984 and harvested under two lot numbers 10750-10507 and 11750-10507 for sales purposes. The trial grounds test of these two lots indicated a combined frequency of off types of 1 flat and 1 oval podded plant in 245 plants observed.

The freedom or very low frequency of off types in the F_9 to F_{11} generation indicated good stability of the line as well as its uniformity. Seed of Sundial was readied for sale in the spring of 1985.

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VARIETY: SUNDIAL *r/s*
Sunrise (formerly E1204 (formerly 1D-86(C)Ms
 (formerly 1C-X2185-(W)MsMsH(MT)1(W)Ms))

EXHIBIT B: Data Indicative of Novelty

SUNDIAL
Sunrise most closely resembles the variety Earliwax in plant and pod type, and maturity. It is differentiated from Earliwax by having a shorter spur and a shorter seed length.

A. Measurements were taken from a planting under field conditions at Sun Prairie, Wisconsin, made on May 19, 1981.

	<u>SUNDIAL</u> <u>Sunrise</u>	<u>Earliwax</u>	<u>t</u>	<u>p</u>
1. Pod spur length (mm) (100 measurements)	9.2	10.8	6.0	<.001

B. Measurements were taken from a planting under field conditions at Sun Prairie, Wisconsin, made on May 20, 1982.

	<u>SUNDIAL</u> <u>Sunrise</u>	<u>Earliwax</u>	<u>t</u>	<u>p</u>
1. Pod spur length (mm) (100 measurements)	9.02	9.55	1.99	.05-.025
2. Seed length (mm) (100 measurements)	11.0	14.1	15.10	<.001

C. Measurements were taken from a planting under field conditions at San Juan Bautista, California, made on June 14, 1982.

	<u>SUNDIAL</u> <u>Sunrise</u>	<u>Earliwax</u>	<u>t</u>	<u>p</u>
1. Pod spur length (mm) (100 measurements)	11.4	12.4	2.71	.01-.005
2. Seed length (mm)	12.2	14.7	23.1	<.001

VARIETY: Swainson (formerly B1204 (formerly ID-86(C)Ma)
 (formerly IC-X2185-(W)MaMaH(MT)I(W)Ma(C)Ma)

EXHIBIT B: Data Indicative of Novelty

Swainson most closely resembles the variety Earliwax in plant and pod type, and maturity. It is differentiated from Earliwax by having a shorter spur and a shorter seed length.

A. Measurements were taken from a planting under field conditions at Sun Prairie, Wisconsin, made on May 19, 1981.

	Swainson	Earliwax	t	p
1. Pod spur length (mm) (100 measurements)	9.2	10.8	6.0	<.001

B. Measurements were taken from a planting under field conditions at Sun Prairie, Wisconsin, made on May 20, 1982.

	Swainson	Earliwax	t	p
1. Pod spur length (mm) (100 measurements)	9.02	9.52	1.99	.05-.025
2. Seed length (mm) (100 measurements)	11.0	14.1	15.10	<.001

C. Measurements were taken from a planting under field conditions at San Juan Bautista, California, made on June 14, 1982.

	Swainson	Earliwax	t	p
1. Pod spur length (mm) (100 measurements)	11.4	12.4	2.71	.01-.005
2. Seed length (mm)	12.2	14.7	23.1	<.001

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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) FERRY-MORSE SEED COMPANY	FOR OFFICIAL USE ONLY PVPO NUMBER 8300095
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) P.O. DRAWER 7274 MOUNTAIN VIEW, CALIFORNIA 94039	VARIETY NAME OR TEMPORARY DESIGNATION SUNRISE SUNDIAL

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 _____ . 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

No. days earlier than

..... Same as

No. days later than

- 1 = Tendercrop
- 3 = Kinghorn Wax
- 5 = Michelite 62
- 7 = Bush Blue Lake 290

- 2 = Kentucky Wonder
- 4 = White Kidney
- 6 = Dwarf Horticultural
- 8 = Other (specify below)

Earliwax

3. PLANT:

1 = Determinate 2 = Indeterminate

cm height

cm shorter than

Same as

comparison variety from above

cm taller than

cm spread

Number primary branches near base

cm narrower than

Branching habit:
1 = compact 2 = open

width same as

comparison variety from above

cm wider than

Main stalk: 1 = brittle 2 = wirey

1 = stout 2 = thin

6

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

2 1 = truncate ends 2 = rounded ends

4 2 gm/100 seed

0 4 gm/100 seed lighter than

8

gm/100 seed same as

-

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 Fuscos 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)
BV-1A

0 Pythium root rot

2 Mosaic mottle

0 Rhizoctonia root rot

0 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:

5

3

VARIETY: ~~Sunrise~~ ^{SUNDIAL Rfs.} (formerly E1204 (formerly 1D-86(C)Ms
(formerly 1C-X2185-(W)MsMsH(MT)1(W)Ms)))

EXHIBIT D: Botanical Description of the Variety

Seed germination is at a medium rate, rate of emergence moderate with a medium vigorous seedling. Flowering is early, concentrated, and continuous until a full set of pods are set.

Plants are determinate, bush-type of growth, medium in height and width, and upright. The leaves are medium small and numerous, medium dark green, moderately pubescent with a medium smooth leaf surface. The leaf shape is deltoid ovate, acuminate, with rounded or truncated bases. The stems and petioles are medium in thickness, stiff, and brittle. The flowers are medium in size, white, and number 2 to 8 buds per inflorescence. Inflorescences arise from the apex and axils of the leaves. Flowering is profuse and concentrated. Pods set high in the plant but under the foliage cover.

Pods are medium to medium short, medium slender, smooth, straight, pale wax color with medium short pedicels and with short spurs. The pods are round toward oval. The wax color develops when the pods are still very small in diameter and holds in the pods as the seed and fiber develop. Seed and fiber develop at a moderate rate. Seed are small, white, oblong, and round in cross-section.

8200083
VARIETY: Garrise (formerly H204 (formerly ID-86(C)M)
(formerly IC-X2185-(W)MaMaH(MT)I(W)Ms))

EXHIBIT D: Botanical Description of the Variety

Seed germination is at a medium rate, rate of emergence moderate with a medium vigorous seedling. Flowering is early, concentrated, and continuous until a full set of pods are set.

Plants are determinate, bush-type of growth, medium in height and width, and upright. The leaves are medium small and numerous, medium dark green, moderately pubescent with a medium smooth leaf surface. The leaf shape is deltoid ovate, acuminate, with rounded or truncated bases. The stems and petioles are medium in thickness, stiff, and brittle. The flowers are medium in size, white, and number 2 to 8 buds per inflorescence. Inflorescences arise from the apex and axils of the leaves. Flowering is profuse and concentrated. Pods set high in the plant but under the foliage cover.

Pods are medium to medium short, medium slender, smooth, straight, pale wax color with medium short petioles and with short spurs. The pods are round toward oval. The wax color develops when the pods are still very small in diameter and holds in the pods as the seed and fiber develop. Seed and fiber developed at a moderate rate. Seed are small, white, oblong, and round in cross-section.

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EXHIBIT "E"

Plant Variety Protection Application

No: 8300095 'Sundial'

ASSIGNMENT

I, 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, Bean, 'Sundial' 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 18th day of February, 19 86.

BREEDER

George C. Emery

FULLER 200000

FRANK J. ...

FRANK J. ...

FRANK J. ...

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OF AGRICULTURE

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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

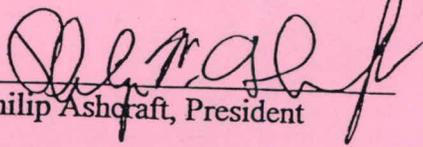
WHEREAS, on the date hereof, Assignee has changed its name to "Harris Moran Seed Company";

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 recordings 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

CERTIFICATE OF AMENDMENT
OF THE
ARTICLES OF INCORPORATION
OF

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

1400010

ENDORSED
FILED

In the office of the Secretary of State
of the State of California

JUN 30 1997

Bill Jones
BILL JONES, Secretary of State

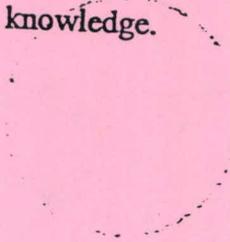
To the Secretary of State
State of California

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

Yves Queste, President

Helen Andritsakis

Helen Andritsakis, Secretary

State of California

SECRETARY OF STATE



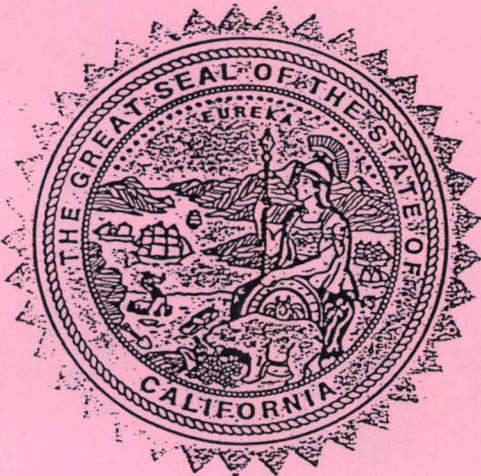
JPAGE

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



Bill Jones

Secretary of State

