

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Moran Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

GARDEN BEAN

'Blue Duet'



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 14th day of January in the year of our Lord one thousand nine hundred and eighty-two.

Attest

Samuel H. Lane
Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

| | | | | | |
|---|--|---|---|--|--|
| 1a. TEMPORARY DESIGNATION OF VARIETY NCX 8010 | | 1b. VARIETY NAME Blue Duet | | FOR OFFICIAL USE ONLY PV NUMBER 7900038 | |
| 2. KIND NAME Snapbean (green) | | 3. GENUS AND SPECIES NAME Phaseolus vulgaris L. | | FILING DATE 1-12-79 | TIME 2:30 P.M. |
| 4. FAMILY NAME (BOTANICAL) Leguminosae | | 5. DATE OF DETERMINATION 1) August, 1974 2) September, 1975 | | FEE RECEIVED \$ 250.00 \$ 250.00 \$ 250.00 | DATE 1-12-79 1-12-79 11-25-81 |
| 6. NAME OF APPLICANT(S) FMC Corporation Agricultural Chemical Grp. Seed Department Moran Seeds, Inc. 1155 Harkins Rd., Salinas | | 7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Post Office Box 2508 El Macero, California 95618 1155 Harkins Road Salinas, California 93901 | | 8. TELEPHONE AREA CODE AND NUMBER (916) 756 1382 (408) 757-3657 | |
| 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 Delaware | | 11. DATE OF INCORPORATION 8/10/28 |
| 12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers: Harrison H. Young, Jr. Patent & Licensing Dept. FMC Corporation 2000 Market Street Philadelphia, Pennsylvania 19103 Herbert P. Price Office of General Counsel Celanese Corporation P.O. Box. 99038 Jeffersontown KY 40299 | | | | | |
| 13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED: | | | | | |
| <input checked="" type="checkbox"/> 13A. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) | | | | | |
| <input checked="" type="checkbox"/> 13B. Exhibit B, Novelty Statement. | | | | | |
| <input checked="" type="checkbox"/> 13C. Exhibit C, Objective Description of the Variety (Request form from Plant Variety Protection Office.) | | | | | |
| <input type="checkbox"/> 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.) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | | | |
| 14B. Does the applicant(s) specify that this variety be limited as to number of generations? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | 14C. If "Yes," to 14B, how many generations of production beyond breeder seed? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED | | | |
| 15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? <input checked="" type="checkbox"/> YES <input type="checkbox"/> 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. | | | | | |

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

December 20, 1978
(DATE)

Stephen Magnuson
Plant Breeder
for FMC Corporation, Seed Dept.
(SIGNATURE OF APPLICANT)

JAN 12 1979

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.

2,500 viable seeds \$500.

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 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.)

EXHIBIT AOrigin and Breeding History of the Variety.

The pedigree method was used in creating this variety. The initial selection was made in 1971 in plot number 7121 of an F2 plant with the parentage Bush Blue Lake 283 (female) and Green Isle (male) at the El Macero Research Station. The F3 generation was grown in Florida during the 1971-72 winter in plot FB-9. The F4 and F5 selections were made from plots 8084 and 9267 in 1972 and 1973, respectively. In 1974, in the F6 generation, fifty selections were made in plot ~~ØAØ2Ø~~ at the San Juan Bautista Research Station. These fifty selections were grown in a progeny row block in 1975. No discernable difference was observed and all fifty rows were bulked. Seed increases of this bulk was made in 1976, 1977 and 1978 in Idaho for testing and stock seed purposes.

No strings have been observed in this variety. An occasional flat has been found. No flats were found in the 1978 Idaho stock seed field of four hundred random plants checked (therefore less than .25% flats).

FMC Corporation- Bean Application No. 7900038, "Blue Duet"

SUPPLEMENT TO EXHIBIT A

The variety remains the same for successive generations,
thus providing evidence of uniformity.

FMC Corporation

Agricultural Chemical Division
1524 McHenry Avenue
Modesto California 95353
(209) 529 7500



July 8, 1980

Mr. Thaddeus E. Frey, Examiner
Plant Variety Protection Office
Grain and Seed Division
Agricultural Marketing Service
United States Department of Agriculture
Beltsville, Maryland 20705

Subject: Bean Application No. 7900038, 'Blue Duet'
Revised Novelty Statement - Exhibit B.

Dear Mr. Frey:

*Exhibit B
cw*

In my Appendum to Exhibit B, dated January 3, 1980, I compared 'Blue Duet' to 'Slenderette' and 'Green Isle' because they fall into the same pod class (short, medium sieve). To the best of my knowledge, 'Blue Duet' most closely resembles 'Green Isle' ('Slenderette' has a more oval pod than either 'Blue Duet' or 'Green Isle').

'Blue Duet' has an erect but more spreading bush (row height - 47 cm x width - 65 cm) than 'Green Isle' (47 x 44). (Note: these measurements are for comparison only, different trials have given different figures due to climatic conditions and cultural practices but 'Blue Duet's' row width has always been significantly wider than 'Green Isle'.) The foliage color of 'Blue Duet' has a distinguishable yellow-green color compared to the dark green foliage of 'Green Isle'. Royal Horticultural Society color comparisons by north light gave values for 'Blue Duet' closest to 135B and 'Green Isle' closest to 135A. 'Blue Duet' has a darker pod (141C) than 'Green Isle' (141D).

Summary Novelty Claim for Journal.

'Blue Duet' most closely resembles 'Green Isle'; however, the pods of 'Blue Duet' are darker green than the pods of 'Green Isle'.

Sincerely,

D. Stephen Magnuson
D. Stephen Magnuson *with*
Plant Breeder

cc: H.H. Young

Thad

Please reply to:

FMC Corporation

Agricultural Chemical Division
1524 McHenry Avenue
Modesto California 95353
(209) 529 7500

F.M.C. Corp. A.C.D.
Western Research Center
P. O. Box 2508
El Macero, Calif. 95618



January 3, 1980

Mr. Kenneth H. Evans, Acting Commissioner
Plant Variety Protection Office
Grain and Seed Division
Agricultural Marketing Service
United States Department of Agriculture
Beltsville, Maryland 20705

Dear Mr. Evans:

Subject: Bean Application No. 7900038, "Blue Duet",
Appendum to Exhibit B.

Blue Duet was compared to Slenderette and Green Isle because they fall into the same pod class. Blue Duet can be easily distinguished from either by habit, foliage color and pod color. Blue Duet has an erect but more spreading bush (height - 47cm X width-65cm) than Slenderette (49 X 46) or Green Isle (47 X 44). The foliage color of Blue Duet has a very distinguishable yellow-green color ("tendercrop color"), compared to the dark green of Slenderette and Green Isle. Royal Horticultural Society color comparisons by north light gave values for Blue Duet closest to 135B and Slenderette and Green Isle closest to 135A. A direct sunlight comparison between Blue Duet and Slenderette gave Blue Duet a reading between 141B and 141C and Slenderette a reading between 141A and the darker 137A. Green Isle was not available at the time that the sunlight reading was made. Pod color values obtained were: Blue Duet - 141C, Slenderette - 143B and Green Isle - 141D.

FORM GR-470-12
(1/77)

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

EXHIBIT C
(Bean)

OBJECTIVE DESCRIPTION OF VARIETY
BEAN (PHASEOLUS VULGARIS)

INSTRUCTIONS: See Reverse.

| | |
|--|---|
| NAME OF APPLICANT(S) FMC Corporation, Agricultural Chem Grp., Seed Department ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Post Office Box 2508 El Macero, California 95618 | FOR OFFICIAL USE ONLY |
| | PVPO NUMBER 7900038 VARIETY NAME OR TEMPORARY DESIGNATION |

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. or) when number is either 99 or less or 9 or less.

1. TYPE:

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

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

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

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

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

GREEN PODS GREEN SHELLS DRY SEEDS

NO. DAYS EARLIER THAN } 1 = TENDERCROP 2 = KENTUCKY WONDER 3 = KINGHORN WAX
 NO. DAYS LATER THAN } 4 = WHITE KIDNEY 5 = MICHELITE 62 6 = DWARF HORTI-CULTURAL
7 = BUSH BLUE LAKE 8 = OTHER (Specify) **Early Gallatin**

4. PLANT:

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

CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE

NUMBER PRIMARY BRANCHES PER MAIN STALK

CM. SPREAD

Branching habit: 1 = COMPACT 2 = OPEN

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

CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

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

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

5. LEAVES:

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

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

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

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

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

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)

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 3 CM. LENGTH 0 9 MM. WIDTH (Between sutures) 1 0 MM. THICKNESS 0 9 $\frac{\text{WIDTH}}{\text{THICKNESS}} \times 10$

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

1 Curvature: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED 1 Pubescence: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE

2 Constrictions: 1 = NONE 2 = SLIGHT 3 = DEEP 1 Spur: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

Surface: 1 = SHINY 2 = DULL 1 Surface: 1 = SMOOTH 2 = BLISTERED

Pod flesh: 1 = LIGHT 2 = DARK 2 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 Seed development: 1 = SLOW 2 = MEDIUM 3 = FAST

5 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
 Secondary color: 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) _____

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

9. SEED SHAPE AND SIZE:

1 Hilum view: 1 = ELLIPTICAL 2 = OVAL 3 = ROUND Side view: 1 = OVAL 2 = ROUND 3 = KIDNEY 4 = TRUNCATE ENDS

2 Cross section: 1 = ELLIPTICAL 2 = OVAL 3 = CORDATE 4 = ROUND 34 GM. WEIGHT PER 100 SEEDS

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

0 5 MM. WIDTH (Dorsal to ventral) 0 6 MM. THICKNESS (Side to side)

1 2 MM. LENGTH 0 0 8 $\frac{\text{WIDTH}}{\text{THICKNESS}} \times 10$

FORM GR-470-12 (PAGE 3 OF 3 PAGES)

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

FLOWERS STEMS PODS SEEDS LEAVES

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

| | |
|---|---|
| <input checked="" type="checkbox"/> RUST (Specify race) _____ | <input type="checkbox"/> ANGULAR LEAF SPOT |
| <input type="checkbox"/> BACTERIAL WILT | <input checked="" type="checkbox"/> COMMON BEAN MOSAIC |
| <input type="checkbox"/> ANTHRACNOSE | <input type="checkbox"/> YELLOW BEAN MOSAIC |
| <input type="checkbox"/> SOUTHERN BEAN MOSAIC | <input type="checkbox"/> FUSARIUM ROOT ROT |
| <input type="checkbox"/> CURLY TOP | <input checked="" type="checkbox"/> N.Y. 15 BEAN MOSAIC |
| <input checked="" type="checkbox"/> POWDERY MILDEW | <input type="checkbox"/> BEAN MOSAIC VIRUS 4 |
| <input checked="" type="checkbox"/> HALO BLIGHT | <input type="checkbox"/> FUSCOUS BLIGHT |
| <input type="checkbox"/> ALFALFA MOSAIC VIRUS | <input type="checkbox"/> ALFALFA MOSAIC VIRUS 2 |
| <input type="checkbox"/> POD MOTTLE VIRUS | <input type="checkbox"/> RED NODE VIRUS |
| <input type="checkbox"/> ROOT KNOT NEMATODE | <input type="checkbox"/> OTHER (Specify) _____ |

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

| | |
|---|--|
| <input type="checkbox"/> APHIDS | <input type="checkbox"/> LEAF HOPPERS |
| <input type="checkbox"/> POD BORER | <input type="checkbox"/> LYGUS |
| <input type="checkbox"/> THRIPS | <input type="checkbox"/> WEAVILS |
| <input type="checkbox"/> SEED CORN MAGGOT | <input type="checkbox"/> OTHER (Specify) _____ |

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

HEAT COLD 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.

Exhibit D. CB per applicant's letter of 7/8/80.

Description of a variety of FRENCH BEANS (*Phaseolus vulgaris* L.)

Based on observations made at CAMBRIDGE in 1977 and 1978

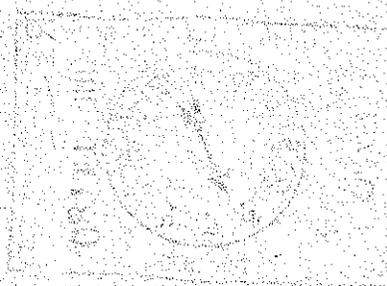
Approved variety name: BLUE DUET
 Reference: AFP 12/139
 Date description prepared: 15 November 1978

| Character | State | Note |
|---|--|--------|
| PLANT | | |
| anthocyanin coloration of hypocotyl: | 1 absent; 9 present | 1 |
| growth type: | 1 dwarf; 2 climbing | 1 |
| LEAF | | |
| colour in axil of petiole: | 1 yellow; 2 green; 3 violet | 2 |
| FLOWER | | |
| size of bracts: | 3 small; 7 large | 6 |
| colour of standard: | 1 white; 2 pink; 3 violet | 1 |
| colour of wings: | 1 white; 2 pink; 3 violet | 1 |
| POD | | |
| Length: | 1 very short; 3 short; 5 medium; 7 long; 9 very long | 5 |
| cross section (through seed): | 1 flat; 2 flat elliptic; 3 elliptic; 4 broad elliptic; 5 cordate; 6 round; 7 eight shaped | 6 to 7 |
| stringiness: | 1 absent; 5 some strings; 7 stringy | 1 |
| degree of curvature: | 1 straight; 2 slightly curved; 3 strongly curved | 1 |
| parchment: | 1 absent; 3 slight; 7 strong | 1 |
| length of beak: | 3 short; 5 medium; 7 long | 7 |
| shape of beak: | 3 straight; 7 curved | 3 |
| constrictions (at maturity): | 1 absent or very slight; 5 medium; 9 very pronounced | 5 |
| surface: | 3 smooth; 5 medium rough; 7 rough | 3 |
| ground colour (at green harvest): | 1 light yellow; 2 golden yellow; 3 light green; 4 medium green; 5 dark green; 6 violet | 4 |
| mottling (pigment at green harvest): | 1 absent; 2 red; 3 violet | 1 |
| degree of mottling or flecking (at maturity): | 3 weak; 5 medium; 7 strong | - |
| number of ovules: | 3 few; 7 many | 3 |
| SEED | | |
| size (1000 seed weight in dry stage): | 1 very small; 3 small; 5 medium; 7 large; 9 very large | 5 |
| shape (longitudinal section in dry stage): | 1 round; 2 elliptic to egg shaped; 3 kidney shaped | 3 |
| shape (cross section in dry stage): | 1 flat; 2 elliptic (oval); 3 round | 2 |
| colour (excluding hilum and corona in dry stage): | 1 white or greenish; 2 monochrome (not white or greenish); 3 two or more colours (state colours) | 1 |
| colour of corona (in dry stage): | 1 self coloured; 2 not self coloured | 1 |
| colour of hilar ring (in dry stage): | 1 self coloured; 2 not self coloured | 1 |

/ continued

Description of a variety of FRENCH BEANS - BLUE DUET - AFP 12/139 - Cont'd

| <i>Character</i> | <i>State</i> | <i>Note</i> |
|--|--|-------------|
| <u>SEED Cont'd</u> veins (in dry stage): | 3 weak; 7 pronounced | 3 |
| <u>TIME OF FLOWERING</u> (50% of plants with at least one flower): | 1 very early; 3 early; 5 medium; 7 late; 9 very late | 5 to 6 |
| <u>RESISTANCE TO COLLETOTRICHUM</u> (race α - 2) | 1 not resistant; 2 resistant | 1 |
| <u>GENERAL</u> | Closest to AMBOY. AMBOY has paler, more curved pods, which show less pronounced constrictions at maturity. | |



A S S I G N M E N T

Whereas FMC CORPORATION, a corporation of the State of Delaware, having an office and place of business at 200 East Randolph Drive, Chicago, Illinois 60601, is the assignee of the entire right, title and interest in and to the United States Plant Variety Protection Certificates and Applications listed on the annexed Schedules A and B; and

Whereas MORAN SEEDS, INC., a corporation of the State of Delaware, having an office and place of business at 1155 Harkins Road, Salinas, California 93901, is desirous of acquiring the entire right, title and interest in and to said United States Plant Variety Protection Certificates and Applications;

Now therefore, for good and valuable consideration, receipt of which is hereby acknowledged, said FMC CORPORATION does hereby assign unto the said MORAN SEEDS, INC. all rights, title and interest in and to the said United States Plant Variety Protection Certificates and Applications listed on the annexed Schedules A and B.

FMC CORPORATION

By:

Daniel C. Smith
Vice-President

STATE OF ILLINOIS)
) ss
COUNTY OF Cook)

On July 31, 1980, before me a Notary Public in and for the County and State aforesaid, appeared

DANIEL C. Smith, Vice President

to me personally known to be the same person whose name is subscribed to the foregoing instrument, and acknowledged that he executed said instrument as his free and voluntary act, and for the uses and purposes therein expressed.

WITNESS my hand and seal the day and year last above given.

Barbara J. Neel
Notary Public

SCHEDULE A

PLANT VARIETY PROTECTION CERTIFICATES

| <u>Certificate No.</u> | <u>Name of Kind</u> | <u>Issued DATE</u> | <u>Name of Variety</u> |
|-----------------------------|---------------------|-----------------------|------------------------|
| 7200145 | Bean | 741030 ^{1st} | Gem |
| 7200146 | Watermelon | 741115 ^{CRB} | Charleston '76 |
| 7600032 | Lettuce | 770915 ^{CRB} | Vanagara |
| 7600028 8 R/S | Muskmelon | 790531 R/S | Valley Gold |

SCHEDULE B

PLANT VARIETY PROTECTION CERTIFICATE APPLICATIONS

| <u>Application No.</u> | <u>Name of Kind</u> | <u>Filing date</u> | <u>Name of Variety</u> |
|------------------------|---------------------|--------------------|------------------------|
| 7900038 | Bean | 790112 <i>set</i> | Blue Duet |
| 7900039 | Bean | 790110 <i>set</i> | Score |

ASSIGNMENT

WHEREAS, Moran Seeds, Inc. ("Moran"), a corporation duly organized and existing under the laws of the State of Delaware is the owner of United States Plant Variety Protection Certificates (the "Certificates"), listed in Exhibit A hereto and Pending United States Plant Variety Protection Applications (the "Applications"), listed in Exhibit B hereto; and

WHEREAS, in accordance with a Technology Transfer Agreement (the "Transfer Agreement") among Celanese Corporation ("Celanese"), Moran Seeds, Inc., Joseph Harris Company, Inc., CelPril Industries, Inc., Harris Moran International B.V. ("Sellers"), Virginia Chemicals, Inc., Les Produits Organiques du Santerre-Orsan S.A. ("Orsan"), HMS Acquisition Inc., CP Acquisition Inc., and Exploitiemaatschappij Wolwevershaven B.V., dated January 10, 1985, and a Purchase Agreement dated December 7, 1985, as amended, among Celanese, Sellers and Orsan, Orsan has purchased from Moran said Certificates and Applications.

NOW, THEREFORE, in accordance with said Transfer Agreement and Purchase Agreement, Moran assigns to Orsan all of its rights, title and interest in and to said Certificates and Applications.

Moran hereby authorizes Orsan to apply for and obtain the recordation of this Assignment. Moran agrees that it shall, without further consideration, promptly and duly cause to be performed such lawful acts and execution of any other documents as Orsan may reasonably request in order for Orsan to obtain the full benefits of this Assignment and to permit Orsan to be duly recorded in each office, bureau and tribunal in the appropriate jurisdiction as the registered owner or proprietor of each of the rights hereby assigned. Such instruments and documents shall include, without limitation, such applications, affidavits and other documents for filing in such jurisdictions as Orsan may from time to time reasonably request.

By these presents Orsan does hereby accept this Assignment and authorize the recording thereof with the appropriate authorities aforesaid.

IN WITNESS WHEREOF, the parties have caused this Assignment to be executed by its proper officers thereunto duly authorized this 10th day of January, 1985.

MORAN SEEDS, INC.,
Assignor

By: David A. Jenkins
David A. Jenkins
Vice President

LES PRODUITS ORGANIQUES DU
SANTERRE-ORSAN S.A.
Assignee

By: [Signature]
Title: Attorney-in-fact

STATE OF New York
COUNTY OF New York

Before me, a Notary Public, in and for said County, personally appeared Patrice Laffoley who acknowledged that he is ~~Patrice Laffoley~~ Patrice Laffoley of Les Produits Organiques du Santerre-Orsan S.A., the corporation which executed the foregoing instrument and who acknowledged he signed said instrument on behalf of said corporation by authority of its Board of Directors; and that said instrument is the free corporate act and deed of said Les Produits Organiques du Santerre-Orsan S.A.

Sworn before me at New York this 10th
day of January, 1985.

Alex C. Lengyel
NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYEL
Notary Public, State of New York
No. 31488723
Qualified in New York County
Commission Expires March 30, 1986

STATE OF New York
COUNTY OF New York

Before me, a Notary Public, in and for said County, personally appeared Daniel Jenkins who acknowledged that he is Vice President of Moran Seeds, Inc., the corporation which executed the foregoing instrument and who acknowledged he signed said instrument on behalf of said corporation by authority of its Board of Directors; and that said instrument is the free corporate act and deed of said Moran Seeds, Inc.

Sworn before me at New York this 10th day of January, 1985

Alex C. Lengyel
NOTARY PUBLIC

(Notary Public)

My Commission Expires:

ALEX C. LENGYEL
Notary Public, State of New York
Qualified in New York County
Commission Expires March 30, 1986

United States Plant Variety Protection Certificates

| <u>Cert. No.</u> | <u>Date Issued</u> | <u>Kind</u> | <u>Variety Name</u> | <u>Owner</u> |
|------------------|--------------------|-------------|---------------------|-----------------------------------|
| 7200145 | 10/30/74 | Garden Bean | Gem | Moran Seeds, Inc. |
| 7200146 | 11/15/74 | Watermelon | Charleston 76 | Moran Seeds, Inc. |
| 7400013 | 5/9/74 | Lettuce | Calmaria | Moran Seeds, Inc. |
| 7400014 | 6/19/74 | Lettuce | Cal K-60 | Moran Seeds, Inc. |
| 7400071 | 6/19/74 | Lettuce | Cabrillo | Moran Seeds, Inc. |
| 7600032 | 9/15/77 | Lettuce | Vanagara | Moran Seeds, Inc. |
| 7600039 | 12/8/77 | Lettuce | Morangold | Moran Seeds, Inc. |
| 7800028 | 5/31/79 | Muskmelon | Valley Gold | Moran Seeds, Inc. |
| 7900038 | 1/14/82 | Garden Bean | Blue Duet | Moran Seeds, Inc. |
| 7900039 | 7/15/82 | Snapbean | Score | Moran Seeds, Inc. |
| 7900066 | 11/27/79 | Cauliflower | Snowball 123 | Moran Seeds, Inc. |
| 8000020 | 7/31/80 | Muskmelon | Top Net | Moran Seeds, Inc. |
| 8000082 | 12/10/81 | Lettuce | Delmar | Moran Seeds, Inc. |
| 8200019 | 10/28/82 | Onion | OMO M | Moran Seeds, Inc. Oshita, Inc. |
| 8200061 | 3/24/83 | Watermelon | Sun Gold | Moran Seeds, Inc. |
| 8200104 | 10/28/82 | Tomato | Advantage | Moran Seeds, Inc. |
| 8200105 | 11/26/82 | Tomato | Moran 3053 | Moran Seeds, Inc. |
| 8200027 | 4/23/83 | Lettuce | El Toro | Moran Seeds, Inc. |
| 8100172 | 9/29/83 | Lettuce | Van Mor | Moran Seeds, Inc. |
| 8300113 | 8/31/84 | Muskmelon | Top Net SR | Moran Seeds, Inc. |

Pending United States Plant Variety Protection Applications

| <u>Application No.</u> | <u>Filing Date</u> | <u>Kind</u> | <u>Variety Name</u> | <u>Owner</u> |
|------------------------|--------------------|-------------|---------------------|-------------------|
| 8100167 | 9/9/81 | Lettuce | Yuma | Moran Seeds, Inc. |
| 8300155 | 7/18/83 | Celery | Bishop | Moran Seeds, Inc. |
| 8300156 | 7/18/83 | Celery | Deacon | Moran Seeds, Inc. |
| 8300172 | 9/1/83 | Tomato | Diego | Moran Seeds, Inc. |
| 8400013 | 12/1/83 | Lettuce | Greenfield | Moran Seeds, Inc. |



DEED OF ASSIGNMENT

WHEREAS, Les Produits Organiques du Santerre - ORSAN (S.A.), a French corporation having a place of business at 16 rue Ballus, 75009 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Arisix (S.A.), a French corporation having a place of business at 61 rue des Belles Feuilles, 75116 Paris, France,

(hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

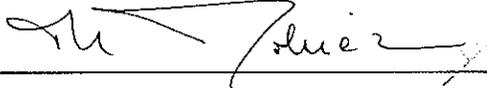
ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE'S expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain the listed Certificates and to vest title thereto in said ASSIGNEE or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR has hereunto signed its name to this assignment on the date indicated below.

Les Produits Organiques du Santerre
- ORSAN (S.A.)

Date: 1/11/95



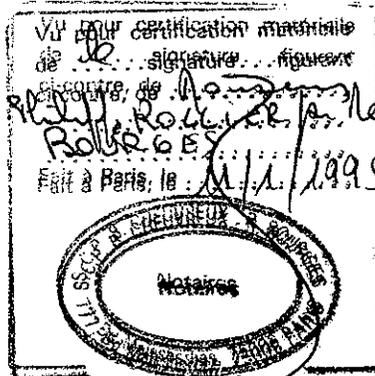
PHILIPPE ROLLIER
Print Name

PRESIDENT
Print Title

On this date, _____, 1993, before me, the undersigned notary public, personally appeared the above-named assignor, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

(Notaire)

Seal/Stamp



112

DEED OF ASSIGNMENT

WHEREAS, Arisix (S.A.), a French corporation having a place of business at 61 rue des Belles Feuilles, 75116 Paris, France (hereinafter referred to as "ASSIGNOR") owns and is using the Plant Variety Protection Certificates listed on the attached Exhibit for the indicated varieties which were awarded to ASSIGNOR by the Secretary of Agriculture on the indicated dates upon applications filed with the United States Plant Variety Protection Office; and

WHEREAS, Clause (S.A.), a French corporation having a place of business at 1 Avenue Lucien Clause, 91221 Bretigny sur ORGE Cedex, France, (hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire right, title and interest in and to the said varieties and Plant Variety Protection Certificates;

NOW, THEREFORE, TO ALL WHOM IT MAY CONCERN: Be it known that, for good and valuable consideration, receipt of which is hereby acknowledged, ASSIGNOR has sold, assigned and transferred, and by these presents does sell, assign and transfer unto said ASSIGNEE, and ASSIGNEE'S successors and assigns, all right, title and interest in and to the said varieties and said Plant Variety Protection Certificates in the United States including reissues, and including the right to enforce such rights against any past, present or future violation thereof, the said interest to be held and enjoyed by said ASSIGNEE as fully and exclusively as it would have been and enjoyed by said ASSIGNOR had this assignment and transfer not been made, to the full end and term of any right, title and interest assigned and transferred hereby.

ASSIGNOR further agrees that it will, without charge to said ASSIGNEE, but at ASSIGNEE'S expense, cooperate with ASSIGNEE in the assignment of said Certificates and the perfection of all rights thereto, execute, verify, acknowledge and deliver all such further papers and instruments of assignment and transfer

thereof, and will perform such other acts as ASSIGNEE lawfully may request, to obtain or maintain the listed Certificates and to vest title thereto in said ASSIGNEE or ASSIGNEE's successors and assigns.

IN TESTIMONY WHEREOF, an authorized representative of ASSIGNOR has hereunto signed its name to this assignment on the date indicated below.

Date: 11/11/95

Arisix (S.A.)

[Handwritten signature]

P DE SAINT RAPT

Print Name:

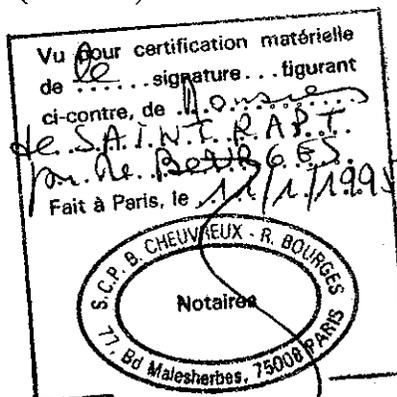
PRESIDENT

Print Title

On this date, _____, 1993, before me, the undersigned notary public, personally appeared the above-named assignor, known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

Seal/Stamp

(Notaire)



EXHIBIT

| Certif. # | Date Status Begins | Crop | Variety Name |
|--------------------|---------------------|-------------|--------------------|
| 7600032 | 09/15/77 | Lettuce | Vanagara |
| 7600039 | 12/08/77 | Lettuce | Morangold |
| 7605018 | 09/28/77 | Marigold | Cabaret Orange |
| 7800028 | 05/31/79 | Muskmelon | Valley Gold |
| 7800033 | 12/21/78 | Radish | Fancy Red |
| 7800086 | 01/25/79 | Lettuce | Deep Red |
| 7900038 | 01/14/82 | Garden Bean | Blue Duet |
| 7900039 | 07/15/82 | Garden Bean | Score |
| 7900066 | 11/27/79 | Cauliflower | Snowball 123 |
| 8000020 | 07/31/80 | Muskmelon | Top Net |
| 8000082 | 12/10/81 | Lettuce | Delmar |
| 8100167 | 3/29/85 | Lettuce | Yuma |
| 8100172 | 09/29/83 | Lettuce | Van Mor |
| 8200027 | 04/23/83 | Lettuce | El Toro |
| 8200045 | 09/23/82 | Turnip | Royal Gem |
| 8200061 | 03/24/83 | Watermelon | Sun Gold |
| 8200068 | 12/30/82 | Egg Plant | Little Fingers |
| 8200104 | 10/28/82 | Tomato | Advantage |
| 8200105 | 11/26/82 | Tomato | Moran 3053 |
| 8300024 | 12/30/83 | Radish | Red King |
| 8300113 | 08/31/84 | Muskmelon | Top Net SR |
| 8300155 | 02/22/85 | Celery | Bishop |
| 8300156 | 01/25/85 | Celery | Deacon |
| 8300172 | 11/29/85 | Tomato | Harris Morgan 3075 |
| 8400013 | 2/19/88 | Lettuce | Greenfield |
| 8600032 | 03/11/88 | Tomato | Murrieta II |

Expired
Expired
Expired

ASSIGNMENT OF INTELLECTUAL PROPERTY

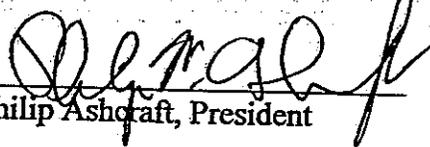
WHEREAS, HARRIS MORAN SEED COMPANY, a corporation duly organized and existing under the laws of the State of Maryland, having its principal place of business at 4511 Willow Road, Suite 3, Pleasanton, California 94588 ("Assignor"), has, pursuant to that certain Bill of Sale and Assignment dated as of 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

CERTIFICATE OF AMENDMENT
OF THE
ARTICLES OF INCORPORATION
OF

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

4400010

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

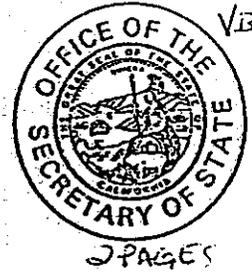
Yves Queste, President

Helen Andritsakis

Helen Andritsakis, Secretary

State of California

SECRETARY OF STATE



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

PLANT VARIETY PROTECTION REGISTRATION ASSIGNMENTS

Clause, S.A. to Harris Moran Seed Company

WHEREAS, Clause, S.A. ("Assignor"), a corporation organized and existing under the laws of France, has sold and transferred assets, including plant variety protection registrations, to Harris Moran Seed Company ("Assignee"), a corporation organized and existing under the laws of the State of Maryland;

WHEREAS, Assignor, is the owner of the following plant variety protection registrations:

| <u>VARIETY NAME</u> | <u>Registration No.</u> | <u>Issue Date</u> |
|---------------------|-------------------------|-------------------|
| ✓ BLUE DUET | 7900038 | 01/14/82 |
| SCORE | 7900039 | 07/15/82 |
| TOP NET SR | 8300113 | 08/31/84 |
| TOP NET | 8000020 | 07/31/80 |
| SNOWBALL 123 | 7900066 | 11/27/79 |
| BISHOP | 8300155 | 02/22/85 |
| DEACON | 8300156 | 01/25/85 |
| LITTLE FINGERS | 8200068 | 12/30/82 |
| EL TORO MI | 8200027 | 04/28/83 |
| DELMAR MI | 8000082 | 12/10/81 |
| GREENFIELD MI | 8400013 | 02/19/88 |
| VAN MOR MI | 8100172 | 03/29/83 |
| YUMA MI | 8100167 | 03/29/85 |

| | | |
|-------------------|---------|----------|
| RED KING | 8300024 | 12/30/83 |
| MORAN 3053 | 8200105 | 11/26/82 |
| ADVANTAGE | 8200104 | 10/28/82 |
| HARRIS MORAN 3075 | 8300172 | 11/29/85 |
| ROYAL GEM | 8200045 | 09/23/82 |
| SUN GOLD | 8200061 | 03/24/83 |

WHEREAS, Assignor is desirous of selling and Assignee is desirous of acquiring the aforesaid plant variety protection registrations of Assignor.

NOW THEREFORE, for \$10.00 and other good and valuable consideration, the receipt of which is hereby acknowledged, Assignor, by these presents sells, assigns and transfers to Assignee, its successors and assigns, all right title and interest in and to the above-referenced plant variety protection registrations, to be held and enjoyed by said Assignee, as fully as the same would have been enjoyed by said Assignor, had this assignment not been made.

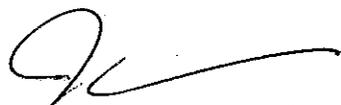
Assignor also assigns and transfers to Assignee, any and all causes of action, claims, demands, or other rights occasioned from or because of any and all past infringement of any of the above referenced plant variety protection registrations.

Assignor further agrees that upon request, it will execute any and all documents necessary to vest all rights, title and interest in and to the above-referenced plant variety protection registrations

IN WITNESS WHEREOF, said Assignor, has affixed its signature hereto this 22 day of

January, 1997.

CLAUSE, S.A.

By: 

Name: Faith W. Fowler

Title: Chairman