

No.

8900248



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Wilmorin, S.A.

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

BEAN

'Castel'



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 June in the year of our Lord one thousand nine hundred and ninety-two.

Attest:

Kenneth D. Ewan
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Edward Madigan
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

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) VILMORIN S.A.		2. TEMPORARY DESIGNATION	3. VARIETY NAME CASTEL
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) La Méniltré - 49250 BEAUFORT EN VALLEE - FRANCE		5. PHONE (Include area code) 41.47.52.21	FOR OFFICIAL USE ONLY PVPO NUMBER 8900248
6. GENUS AND SPECIES NAME Phaseolus vulgaris	7. FAMILY NAME (Botanical)		FILING DATE June 16 1989 TIME 9:30 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. KIND NAME Bean	9. DATE OF DETERMINATION 1988		FEE RECEIVED AMOUNT FOR FILING \$ 2150.00 DATE June 16, 1989 AMOUNT FOR CERTIFICATE \$ 250.- DATE June 22, 1992
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) CORPORATION			12. DATE OF INCORPORATION 1742
11. IF INCORPORATED, GIVE STATE OF INCORPORATION France			
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Donald D. JEFFERY Foley & Lardener, Schwartz, Jeffery, Schwaab, Mack, Blumenthal & Evans P.O Box 299 - Alexandria, Virginia 22313 PHONE (Include area code): (703) 836-9300			

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

- a. Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)
- b. Exhibit B, Novelty Statement.
- c. Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.)
- d. Exhibit D, Additional Description of Variety.
- e. Exhibit E, Statement of the Basis of Applicant's Ownership.

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.) Yes (If "Yes," answer items 16 and 17 below) No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? Yes No

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? Foundation Registered Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? Yes (If "Yes," give date) No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? Yes (If "Yes," give names of countries and dates) 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.

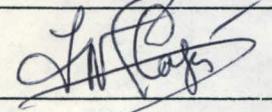
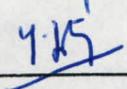
SIGNATURE OF APPLICANT J. N. PLAGES		DATE 24 avril 1989
SIGNATURE OF APPLICANT Y. JESTIN	Chef de Station 	DATE 24 avril 1989

EXHIBIT A Origin and Breeding History of the Variety

'Castel' was the result of a cross between the variety 'Primanor' (a variety bred by Clause 91220 Bretigny Sur Orge, France) and a stock line 'Armored' of applicant Vilmorin S.A. The first (F₁) through the sixth (F₆) generations were accelerated in the greenhouse from 1980-1982, and the single seed descent selection method was employed. Pathological testing was conducted during this period.

From the seventh (F₇) through the tenth (F₁₀) generations (1982-1985), the characteristics of the new variety were fixed in the field, and further pathological testing and analyses (yield, quality, etc.) were conducted. No variants have been observed since the seventh generation, and seventeen generations of propagation have occurred. Reproduction for far more than three (3) generations has clearly established both stability and uniformity.

EXHIBIT B Novelty Statement

'Castel' is most similar to 'Primanor', an early snap bean which has a short pod for canning purposes. 'Castel' differs from 'Primanor' in several respects, including having longer pods by at least 1.5 cm for each range of pod diameters. The average pod lengths of both varieties, taken over a period of five (5) years, are as follows:

	extra fine (6 to 8 mm diameter)		fine (8 to 9 mm)		half-fine (9 to 10.5 mm)	
	Castel	Primanor	Castel	Primanor	Castel	Primanor
Average length of pods (in cm)	9.40	7.85	10.86	8.97	11.39	13.19
Difference in length between both varieties (in cm)	1.55		1.89		1.80	

Also, 'Castel' is resistant to Pseudomonas Syringae pv phaseolicola (Halo blight), in contrast to 'Primanor' which is not. This particular behavior was observed under both natural and controlled conditions where artificial inoculation of the bacteria was done on plants. No halo blights were noticed on the 'Castel' beans, as compared to 'Primanor'.

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) VILMORIN	FOR OFFICIAL USE ONLY
	PVPO NUMBER 8900248
ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) La Ménitré - 49250 BEAUFORT EN VALLEE	VARIETY NAME OR TEMPORARY DESIGNATION CASTEL

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 La Ménitré FRANCE . Please answer questions appropriate for your variety if the information is available.

1. TYPE:

1 = Field (dry-edible) 2 = Garden

2. MARKET MATURITY:

<input type="text" value="5"/> <input type="text" value="8"/> Days to edible pods	<input type="text"/> <input type="text"/> Days to green shells
<input type="text"/> <input type="text"/> <input type="text"/> Days to dry seeds	
<input type="text" value="0"/> <input type="text" value="5"/> <input type="text" value="2"/> <input type="text" value="0"/> Heat units to edible pods	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Heat units to green shells
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Heat units to dry seeds	
<input type="text"/> <input type="text"/> No. days earlier than	1 = Tendercrop 3 = Kinghorn Wax 5 = Michelite 62 7 = Bush Blue Lake 290
..... Same as	
<input type="text" value="0"/> <input type="text" value="2"/> No. days later than	
	2 = Kentucky Wonder 4 = White Kidney 6 = Dwarf Horticultural 8 = Other (specify below) <u>PRIMANOR</u>

3. PLANT:

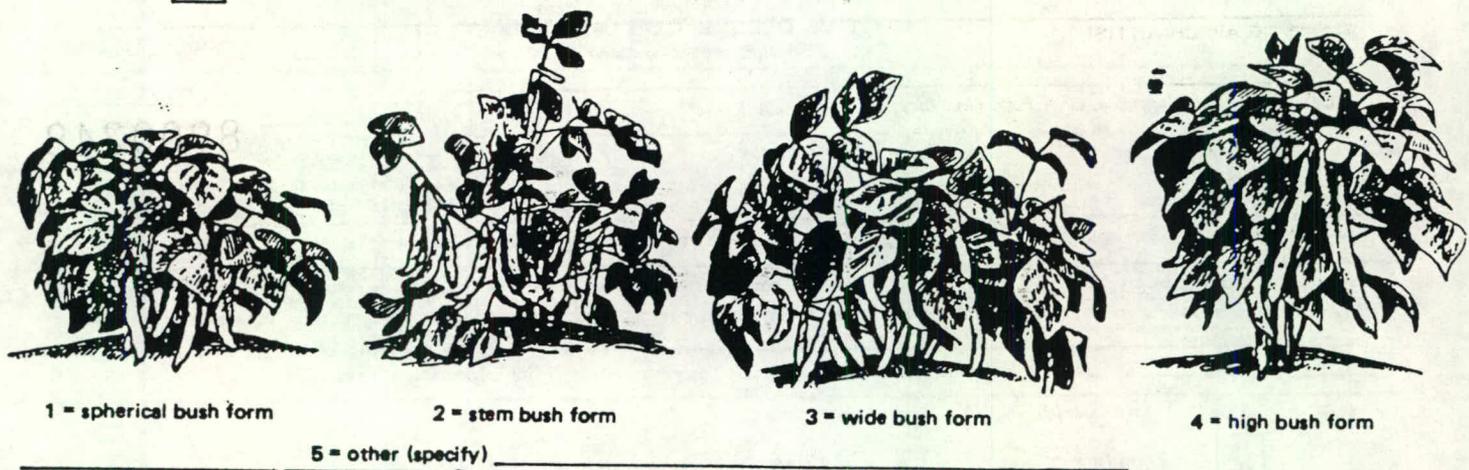
1 = Determinate 2 = Indeterminate

<input type="text" value="0"/> <input type="text" value="4"/> <input type="text" value="5"/> cm height	
<input type="text"/> <input type="text"/> cm shorter than	} comparison variety from above
..... Same as	
<input type="text" value="0"/> <input type="text" value="5"/> cm taller than	<input type="text" value="8"/>
<input type="text" value="4"/> <input type="text" value="0"/> cm spread	<input type="text"/> <input type="text"/> <input type="text"/> Number primary branches near base
<input type="text"/> <input type="text"/> cm narrower than	} comparison variety from above
..... width same as	
<input type="text" value="8"/>	
<input type="text"/> <input type="text"/> cm wider than	<input type="text" value="1"/> Branching habit: 1 = compact 2 = open
<input type="text" value="1"/> Main stalk: 1 = brittle 2 = wirey	<input type="text" value="1"/> 1 = stout 2 = thin

3. PLANT: (Cont'd)

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

4 Bush form (illustrated below):



4. LEAVES:

1 1 = smooth 2 = wrinkled

1 1 = dull 2 = glossy

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

2 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:

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

4 0 Days to 50% bloom

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

2 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

Notes:
 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

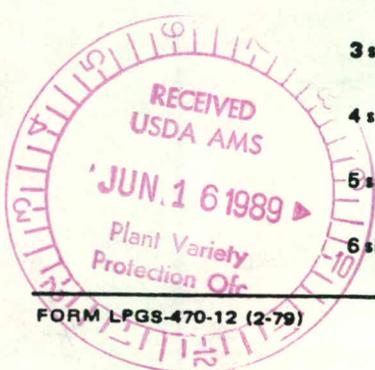
1	2	3	4	5	6
		10	55	35	

3 sieve 1 0 cm length mm width mm thickness

4 sieve 1 1 cm length mm width mm thickness

5 sieve 1 1 cm length mm width mm thickness

6 sieve cm length mm width 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
- 1 Pubescence: 1 = none 2 = sparse 3 = considerable
- 1 Spur: 1 = straight 2 = slightly curved 3 = curved
- 2 Constrictions: 1 = none 2 = slight 3 = deep
- 2 Pod flesh: 1 = light 2 = medium 3 = dark
- 1 2 mm spur length
- 2 Fiber: 1 = none 2 = sparse 3 = considerable
- 5 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
- 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
- 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) _____
- 1 Color Pattern: 1 = none 2 = splashed 3 = mottled 4 = striped 5 = flecked 6 = dotted
- 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) _____
- 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
- 1 Side view:  1 = oval to oblong  2 = round  3 = reniform

6

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

2 1 = truncate ends 2 = rounded ends

1 9 gm/100 seed

0 5 gm/100 seed lighter than 8

gm/100 seed same as

gm/100 seed heavier than

comparison variety from page one

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):

2 Anthracnose (specify race below)
Type STRAINS

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)
type STRAIN

0 Pythium root rot

2 Mosaic mottle

0 Rhizoctonia root rot

1 Black root

0 Pythium wilt

0 Bean yellow mosaic virus

0 Angular leaf spot

0 Curly top

0 Bacterial wilt

Other (specify below)

2 Halo blight (specify race below)
STRAIN 1 + 2

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)

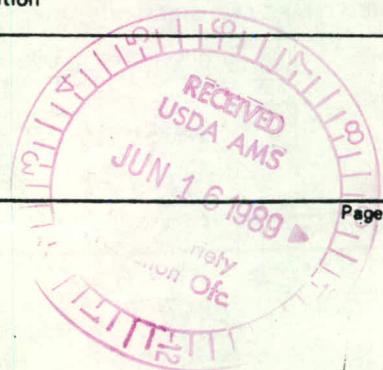
0 Heat

0 Cold

0 Drought

0 Air pollution

13. COMMENTS:



8900248

EXHIBIT D Additional Description of the Variety

The attached photograph depicts the coloration and configuration of mature beans of the Castel variety.

SEMP COTTON & BIRD
Wesley Bony

8900248



EXHIBIT E Statement of the Basis of Applicant's Ownership

Ownership of the Castel variety by the applicant is the result of an assignment of all rights in the variety by the breeder, Jean Noel Plages, 29 Chemin des Airaultas - 49250 Beaufort en Vallee, to Vilmorin, S.A., the applicant, executed on March 13, 1989.