No. 7400022

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

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

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PEA

'Spring'

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* 16th *day of* August *in the year of our Lord one thousand nine hundred and* seventy-four

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(12-15-72)

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

FORM APPROVED
OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1. VARIETY NAME OR TEMPORARY DESIGNATION Spring	2. KIND NAME Garden Pea	FOR OFFICIAL USE ONLY PV NUMBER 7400022
3. GENUS AND SPECIES NAME Pisum Sativum	4. FAMILY NAME *(Botanical)* Leguminosae	FILING DATE 10·1·73 / TIME 10:00 A.M.
	5. DATE OF DETERMINATION 1969	FEE RECEIVED $250.00 / BALANCE DUE $0.00
6. NAME OF APPLICANT(S) Asgrow Seed Company	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Kalamazoo, Michigan 49001	8. TELEPHONE AREA CODE AND NUMBER 616+382-4000

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Corporation	10. STATE OF INCORPORATION Delaware	11. DATE OF INCORPORATION 22 March 1968

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

Allen R. Trotter, Ph.D. 9625-190-1
Asgrow Seed Company
Subsidiary of The Upjohn Company
Kalamazoo, Michigan 49001

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

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

[X] 13B. Exhibit B, Botanical Description of the Variety

[X] 13C. Exhibit C, Objective Description of the Variety

[X] 13D. Exhibit D, Data Indicative of Novelty

[X] 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

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 [X] NO

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

The applicant declares that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) of this sexually-reproduced novel plant variety believes that the variety is distinct, uniform, and stable as required in Section 41 and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant is informed that false representation herein can jeopardize protection and result in penalties.

27 September 1973
(DATE)

(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

Exhibit A - Origin and Breeding History of Spring (XP-F27)

The history of Spring is as follows:

1960 - Original cross - Sprite x Freezer 69

1961 - F_1 was grown in summer.

1962 - F_2 was grown and single plant selections were made.

1963 - F_3 was grown and single plant selections were made.

1964 - F_4 was grown and single plant selections were made.

1965 - F_5 was grown and single plant selections were made.

1966 - a. A second small increase was made accompanied by mass selection.
b. Placed in yield trial.

1967 - a. A second small increase was made accompanied by mass selection.

1968 - a. Tested in replicated yield trial.
b. Small increase along with mass selection.

1969 - a. Tested in replicated trial.
b. Increased
c. Designated XP-F27

1970 - a. Tested in replicated trial.
b. Increased

1971 - a. Tested in large scale trials.
b. Tested for homozygosity by progeny tests.

1972 - Further tested and increased.

1973 - a. Additional tests
b. Further increased
c. Named "Spring"

The 1971 test for homozygosity was positive and since then the only off-types observed were the usual number of steriles and bloaters. The variety is considered homozygous and stable.

Exhibit B Botanical Description of Spring

The description of this variety is based primarily on data obtained from several years trials at the Asgrow Research Center at Twin Falls, Idaho. Some plant characteristics are quite stable whereas others are greatly modified by environment. Days to maturity, average sieve size, plant height and many other characters vary from year to year and area to area. The data given are generally averages of several years trials at Twin Falls, and are not necessarily valid for a single trial at Twin Falls or at other locations.

Spring is an extremely early large sieve freezer pea. It is two days earlier than Sprite which has been the earliest freezer pea used in the United States and probably the world.

Being extremely early has resulted in a small plant, however plant height is somewhat taller than Sprite.

The plants are determinate and the stems are medium in thickness. There is practically no branching of the stem. There are approximately nine nodes to first flowering.

Stipules are present and are clasping. They are the same size and color as the leaflets and are marbled. The flowers are white.

The dark green pods are straight and have a shiny smooth surface. Pods are borne as singles and doubles.

The seeds are normal for freezer peas in that they are dark green, wrinkled and without any color pattern. One hundred seeds weigh 25 grams.

Sieve size at processing maturity is quite large and averages about 4.5.

Plant reaction to drought, heat and cold seems to be normal for early freezer peas. The variety has been widely tested and no special reactions have been observed.

The variety is resistant to Fusarium Wilt and susceptible to Near Wilt, Powdery Mildew and Pea Enation Mosaic. It has not been tested for resistance to other diseases or to insects.

RECEIVED OCT 1 73 PVPO

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, 6525 Belcrest Road, Hyattsville, Maryland 20782. (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 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.

13a First, give the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method. Second, give the details of subsequent stages of selection and multiplication. Third, indicate the type and frequency of variants during reproduction and multiplication and state how these variants may be identified. Fourth, provide evidence on stability.

13b First, give any special characteristics of the seed and of the plant as it passes through the seedling stage, flowering stage and the fruiting stage. Second, describe the mature plant and compare it with a similar commercial variety grown under the same conditions, and indicate the differences.

13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.

13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

FORM APPROVED. OMB NO. 40-R 3712

FORM GR-470-14
(10-2-72)

EXHIBIT C
(Pea)

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

OBJECTIVE DESCRIPTION OF VARIETY

PEA *(PISUM SATIVUM)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Asgrow Seed Company

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
9620-190-1
Kalamazoo, Michigan 49001

FOR OFFICIAL USE ONLY

PVPO NUMBER
740022

VARIETY NAME OR TEMPORARY DESIGNATION
Spring (XP-F27)

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. TYPE:

[2] 1 = TALL (Internodes straight)
2 = DWARF (Internodes zigzag)

[1] 1 = GARDEN 2 = FIELD 3 = EDIBLE-PODDED

2. SEASON:

[1] Node number of first bloom: 1 = EARLY (8 - 12th node) 2 = MIDSEASON (13 - 24th node) 3 = LATE (Greater than 24th node)

3. MATURITY:

[0][2] No. of days *Earlier* than ..... [1]
[ ][ ] No. of days *Later* than ..... [ ]

1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL
4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

4. PLANT HEIGHT:

[0][4][7] CM. HIGH

[1][3] Cm. *Shorter* than ..... [1]
[ ][ ] Cm. *Taller* than ..... [ ]

1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL
4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

5. VINE:

[1] Habit: 1 = DETERMINATE 2 = INDETERMINATE

[2] Stockiness: 1 = SLIM (Alaska) 2 = MEDIUM (Thomas Laxton WR) 3 = HEAVY (Alderman)

[1] Branching: 1 = NONE (Alaska) 2 = 1 - 2 BRANCHES (Little Marvel) 3 = MORE THAN 2 BRANCHES (Dwarf Gray Sugar)

[1] Node Color: 1 = GREEN 2 = RED BLOTCH

[0][9] NUMBER OF NODES

[0][7] CM. INTERNODE LENGTH (Just below 1st flowering node)

6. LEAFLETS:

[3] Color: 1 = LIGHT GREEN (Alaska WR) 2 = MED. GREEN (Thomas Laxton WR) 3 = DARK GREEN (Alderman) 4 = OTHER (Specify) _____

[1] Wax: 1 = NONE 2 = LIGHT 3 = MEDIUM 4 = HEAVY

[2] Marbling: 1 = NONE 2 = MARBLED (Alaska)

[3] Number of leaflet pairs: 1 = NOT PAIRED 2 = ONE 3 = TWO 4 = THREE OR MORE

7. STIPULES:

[2] 1 = LACKING 2 = PRESENT

[2] 1 = NOT CLASPING 2 = CLASPING

[2] 1 = NOT MARBLED 2 = MARBLED

[3] Size (Compared with leaflets): 1 = SMALLER 2 = SAME 3 = LARGER

[2] Color (Compared with leaflets): 1 = LIGHTER 2 = SAME 3 = DARKER

8. FLOWER COLOR:

[1] 1 = MONOCOLOR 2 = BICOLOR

[1] Venation [1] Standard [1] Wing [1] Keel

1 = WHITE 2 = GREENISH 3 = LAVENDER 4 = PURPLE
5 = RED 6 = OTHER (Specify) _____

4

9. PODS:

[1] Shape: 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = CURVED

[2] End: 1 = POINTED (Alderman) 2 = BLUNT (Alaska)

[3] Color: 1 = LIGHT GREEN (Alaska WR) 2 = MEDIUM GREEN 3 = DARK GREEN (Alderman) 4 = OTHER (Specify) _____

[1] Surface: 1 = SMOOTH 2 = ROUGH

[1] 1 = SHINY 2 = DULL

[3] Borne: 1 = SINGLE 2 = DOUBLE 3 = SINGLE AND DOUBLE 4 = SINGLE, DOUBLE, & TRIPLE 5 = DOUBLE & TRIPLE 6 = TRIPLE 7 = OTHER (Specify) _____

[0 7] CM. LENGTH [1 3] MM. WIDTH (Between sutures) [0 6] NUMBER OF SEEDS PER POD

10. SEEDS (95 - 100 Tenderometer):

[3] Color: 1 = LIGHT GREEN (Perfection Canner) 2 = GREEN (Little Marvel) 3 = DARK GREEN (Dark Skin Perfection) 4 = OTHER (Specify) _____

[4] Shape: 1 = FLATTENED 2 = ANGULAR 3 = OVAL 4 = ROUNDED

[3] Surface: 1 = SMOOTH 2 = DIMPLED 3 = WRINKLED [1] Surface: 1 = SHINY 2 = DULL

SEEDS (Mature, Dry):

[1] Color: 1 = MONOCOLOR 2 = BICOLOR

[7] Primary Color: [ ] Secondary Color:
1 = CREAMY-WHITE (Mammoth Melting Sugar) 2 = YELLOW (Arthur) 3 = CREAM & GREEN (Thomas Laxton) 4 = YELLOW 5 = LIGHT GREEN (Alderman) 6 = MEDIUM GREEN (Little Marvel) 7 = DARK GREEN (Dark Skin Perfection) 8 = BLUE-GREEN (Alaska WR) 9 = BROWN 10 = RED 11 = GRAY 12 = BLACK

[ ] Color Pattern: 1 = SPLASHED 2 = MOTTLED 3 = STRIPED 4 = FLECKED 5 = DOTTED

[2] Hilum Floor Color: 1 = WHITE 2 = TAN 3 = BLACK [3] Cotyledon Color: 1 = YELLOW 2 = ORANGE 3 = GREEN

[2 5] GRAMS PER 100 SEED

11. SEED SIEVE SIZE DISTRIBUTION (95 - 100) Tenderometer):

Sieve (%): [0 5]1 [0 6]2 [1 1]3 [1 6]4 [4 3]5 [1 9]6 [ ]7 [ ]8

12. PLANT REACTION: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] 1 = DROUGHT (Wando) [0] 2 = COLD (Alaska) [0] 3 = HEAT (Wando)

13. DISEASE: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[2] FUSARIUM WILT [1] NEAR-WILT [0] DOWNY MILDEW

[0] ASCOCHYTA BLIGHT [1] POWDERY MILDEW [0] BACTERIAL BLIGHT

[0] MOSAIC [1] PEA ENATION MOSAIC [0] YELLOW BEAN MOSAIC

[0] OTHER (Specify) _____

14. INSECT: (0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] APHIDS [0] OTHER (Specify) _____

15. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leafiness	Trumpet	Fresh Seed Color	Trumpet
Leaf Color	"	Mature Seed Color	"
Pod Color	"	Seed Shape	"
Pod Shape	"	Plant Habit	"

REFERENCES: The following publication may be used as a reference aid for the standardization of character descriptions and terms:

1. Shoemaker, D. N., 1934. Descriptions of Types of Principal American Varieties of Garden Peas. U.S.D.A. Miscellaneous Publication, No. 170.
2. Hedrick, V. P., 1928. The Vegetables of New York. New York Agricultural Experiment Station. Vol. 1., Part 1.
3. Wade, B. L., 1943. A Key to Pea Varieties. U.S.D.A. Circular No. 676.

Nickerson's or any recognized color fan may be used to determine color of the described variety.

Exhibit D Evidence of Uniqueness of Spring

Spring is a very early freezer pea and most nearly resembles the varieties Trumpet and Sprite.

Spring differs from Trumpet as follows:

a. Spring reaches processing maturity three days before Trumpet.

b. Spring plant height is about 5 cm shorter than Trumpet - 47 cm as compared to 52 for Trumpet.

c. Spring peas at processing maturity average about 4.5 sieve whereas Trumpet sieve size at the same tenderometer averages about 4.0.

Spring differs from Sprite as follows:

a. Spring reaches processing maturity two days before Sprite.

b. Spring plant height is about 5 cm taller than Sprite - 47 cm as compared to 42 cm for Sprite.

c. Spring peas at processing maturity average about 4.5 sieve whereas Sprite sieve size at the same tenderometer averages about 4.0.

Spring

Addendum to Exhibit D. Pea - Spring #7400022

Sieve Size Distribution (Average several trials)

	Spring	Sprite	Trumpet
Sieve 1	5	6	6
2	5	10	12
3	8	19	20
4	16	17	18
5	44	31	30
6	22	16	15
7	Tr	1	1
Aver.	4.55	4.09	4.10

Sieve data varies considerably and no two trials produce the same results so that it is difficult to differentiate varieties on the basis of sieve size distribution except on an accumulation of data from a number of trials unless average sieve size differences are relatively large. On the average Spring is larger than either Sprite or Trumpet by approximately one-half sieve.

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

The new plant variety, Spring, was developed under the investigation, support and corporate objectives of Asgrow Seed Company (a subsidiary of The Upjohn Company), utilizing contributive parent stocks and facilities owned or controlled by the company.