



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 *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 EXHIBIT OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING 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. 1543 AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

PEA

'Dual'



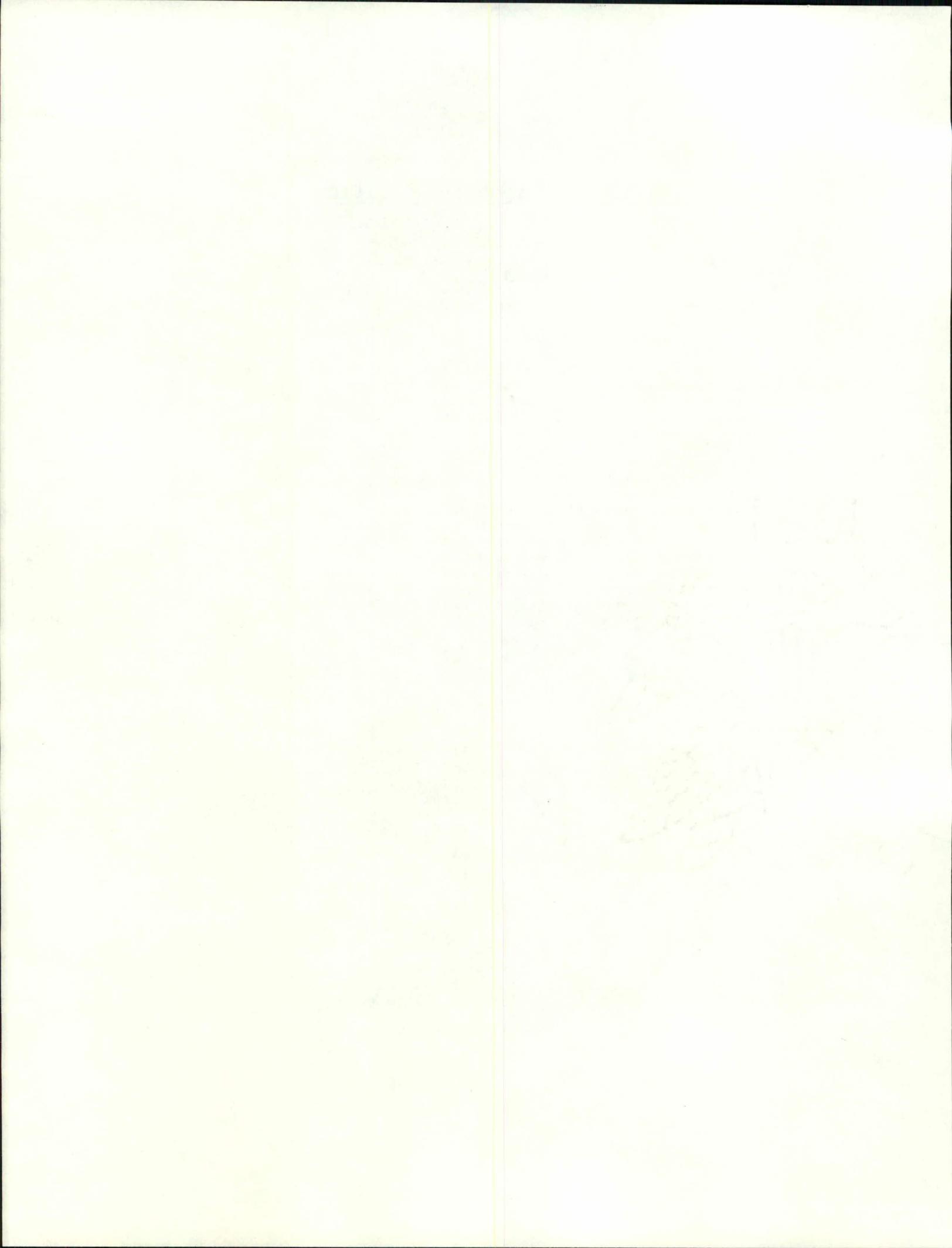
In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this 23rd day of September in the year of our Lord one thousand nine hundred and eighty-two

Attest:

Kenneth B. ...

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

John R. Block
Secretary of Agriculture



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.

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AMS, LPG&S DIV.
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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 XP-P111		1b. VARIETY NAME Dual <i>157 P11026</i>		FOR OFFICIAL USE ONLY PV NUMBER 8200010	
2. KIND NAME Garden Pea		3. GENUS AND SPECIES NAME Pisum Sativum		FILING DATE 10/26/81	TIME 2:00 <u>A.M.</u>
4. FAMILY NAME (BOTANICAL) Leguminosae		5. DATE OF DETERMINATION July, 1978		FEE RECEIVED \$ 500.00	DATE 10/26/81
6. NAME OF APPLICANT(S) Asgrow Seed Company		7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) Kalamazoo, MI 49001 9620-190-25		8. TELEPHONE AREA CODE AND NUMBER 616-385-6605	
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 March 22, 1968	

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

John A. Batcha
 Asgrow Seed Company 9620-190-25
 Kalamazoo, MI 49001

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.)

United Kingdom March 23, 1981

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.

September 2, 1981
 (DATE)

John A. Batcha
 (SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

8200010

EXHIBIT A

Origin and Breeding History of XP-P111 Garden Pea

The original cross, made in 1970 as hybrid #3872, was Green Arrow by a breeding line, Elf x Nugget. XP-P111 was developed by straight selection from that cross.

In 1978 two groups of F₆ sister lines, one of 6 families and the other of 4 families, were in breeding observation rows. All of the lines appeared very similar in July of 1978 and it was determined that the lines were breeding true. Two of the lines were bulked for yield trial in 1979, and additional lines were in observations that same year. All the data from 1979 confirmed that these lines were breeding true. Further trials in 1980 confirmed high yield potential and other useful characteristics of the line, and in that year it was nominated as XP-P111.

XP-P111 is a stable, true breeding line. We have been able to find no segregation.

Observations indicated XP-P111 is uniform and stable within commercially acceptable levels.

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EXHIBIT B

Novelty Statement Concerning XP-P111 Garden Pea

XP-P111 is unique as a late season freezer pea because of 1.) high yield potential; 2.) a berry size that is smaller than most standard freezer peas; and 3.) high berry count per pod. To our knowledge, the commercial variety most similar to XP-P111 is Green Arrow. Comparative characteristics that make XP-P111 a distinct variety include, but may not be limited to the following:

1. In 1979 the average dry seed count of XP-P111, from 30 samples, was 2,832 seeds/pound compared to an average of 2,446 seeds/pound for four samples of Green Arrow. The pooled estimate of the standard error of the difference between these two averages is 37, with 23 degrees of freedom, indicating the difference (386 seeds/pound) is highly significant ($p \ll 0.001$.)
2. XP-P111 has been 50 to 60 heat units earlier to processing maturity than Green Arrow.

1979 Trial data corrected to 115 tenderometer

<u>Line</u>	<u>Heat Units</u>	<u>Sieve Size</u>
XP-P111	1480	3.7
Green Arrow	1540	4.2

1980 Trial data corrected to 115 tenderometer

<u>Line</u>	<u>Heat Units</u>	<u>Sieve Size</u>
XP-P111	1670	3.7
Green Arrow	1720	3.6

3. In 1980 XP-P111 bore double pods on the second and third nodes more consistently than did Green Arrow. When 50 of each were counted on XP-P111, 48 of the second nodes bore double pods (1.96 pods/node) and 48 of the third nodes bore double pods. Green Arrow bore double pods on 7 of 10 for both the second and third nodes (1.7 pods/node).

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MEMO

FROM D. M. Webster

DMW

FEB 16 1982

DATE

February 11, 1982

COPIES TO

JDatkin

We have found the following differences between Dual pea, XP-P111, and the varieties considered by Mr. Frey.

Green Arrow:

In 1979 we observed a highly significant difference between Green Arrow and Dual in seed size. Green Arrow was larger by an amount equivalent to 386 seeds/lb. In 1980 there was again a large difference in seed size. Green Arrow at 2180 seeds/lb. was larger than Dual, which averaged 2370 seeds/lb. over 19 replications. The range of values for Dual was entirely outside of the value for Green Arrow.

In 1981 Dual was again earlier than Green Arrow. Dual reached 104 tenderometer at 1533 heat units, compared to Green Arrow which required 1618 heat units to reach 105 tenderometer.

8. PODS:

Shape: 1 = STRAIGHT 2 = SLIGHTLY CURVED End: 1 = POINTED (Alderman) 2 = BLUNT (Alaska)
 3 = CURVED
 Color: 1 = LIGHT GREEN (Alaska WR) 2 = MEDIUM GREEN 3 = DARK GREEN (Alderman)
 4 = OTHER (Specify) _____
 Surface: 1 = SMOOTH 2 = ROUGH Surface: 1 = SHINY 2 = DULL
 Borne: 1 = SINGLE 2 = DOUBLE 3 = SINGLE AND DOUBLE 4 = SINGLE, DOUBLE, & TRIPEE
 5 = DOUBLE & TRIPLE 6 = TRIPLE 7 = OTHER (Specify) _____
 CM. LENGTH MM. WIDTH (Between sutures) NO. SEEDS PER POD

9. SEEDS (95-100 Tenderometer):

Color: 1 = LIGHT GREEN 2 = GREEN 3 = DARK GREEN 4 = OTHER (Specify) _____
 Seive: %

SEEDS (Dry, Mature):

Shape: 1 = FLATTENED 2 = ANGULAR 3 = OVAL 4 = ROUNDED
 Surface: 1 = SMOOTH 2 = DIMPLED Surface: 1 = SHINY 2 = DULL
 3 = WRINKLED
 Color Pattern: 1 = MONOCOLOR 2 = MOTTLED 3 = STRIPED 4 = DOTTED
 Primary Color: *SEP 820415* 1 = CREAMY-WHITE 2 = CREAM & GREEN 3 = LIGHT GREEN 4 = MEDIUM GREEN
 5 = DARK GREEN 6 = BLUE-GREEN 7 = YELLOW 8 = BROWN 9 = RED
 Secondary Color: 10 = GRAY 11 = BLACK
 Hilum Floor Color: 1 = WHITE 2 = TAN Cotyledon Color: 1 = GREEN 2 = YELLOW 3 = ORANGE
 3 = BLACK
 GRAMS PER 100 SEEDS

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

FUSARIUM WILT NEAR-WILT DOWNY MILDEW
 ASCOCHYTA BLIGHT POWDERY MILDEW BACTERIAL BLIGHT
 MOSAIC PEA ENATION MOSAIC YELLOW BEAN MOSAIC
 OTHER (Specify) _____

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

APHIDS OTHER (Specify) _____

12. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Leafiness	Green Arrow	Fresh Seed Color	Green Arrow
Leaf Color	Green Arrow	Mature Seed Color	Green Arrow
Pod Color	Green Arrow	Seed Shape	Green Arrow
Pod Shape	Green Arrow	Plant Habit	Green Arrow

COMMENTS:

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705
OBJECTIVE DESCRIPTION OF VARIETY
PEA (*PISUM SATIVUM*)

NAME OF APPLICANT(S)

Asgrow Seed Company

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

Kalamazoo, MI 49001
9620 190 25

VARIETY NAME OR TEMPORARY DESIGNATION

XP-P111

Dual *ft 820602*

FOR OFFICIAL USE ONLY

PVPO NUMBER

8200010

Place the appropriate number that describes the varietal character 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 = GARDEN 2 = FIELD 3 = EDIBLE-PODDED

2. MATURITY:

Node number of first bloom: No. of days to processing Heat Units
 No. of days Earlier than } 1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL
 No. of days Later than } 4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

3. PLANT HEIGHT:

CM. HIGH
 Cm. Shorter than } 1 = ALASKA WR 2 = THOMAS LAXTON WR 3 = LITTLE MARVEL
 Cm. Taller than } 4 = WANDO 5 = ALDERMAN WR 6 = AUSTRIAN WINTER

4. VINE:

Habit: 1 = DETERMINATE 2 = INDETERMINATE Stockiness: 1 = SLIM (Alaska) 3 = HEAVY (Alderman)
2 = MEDIUM (Thomas Laxton WR)
 Branching: 1 = NONE (Alaska) 2 = 1-2 BRANCHES (Little Marvel) 3 = MORE THAN 2 BRANCHES (Dwarf Gray Sugar)
 Internodes: 1 = STRAIGHT 2 = ZIG ZAG NUMBER OF NODES

5. LEAFLETS:

Color: 1 = LIGHT GREEN (Alaska WR) 2 = MED. GREEN (Thomas Laxton WR) 3 = DARK GREEN (Alderman)
4 = OTHER (Specify)
 Wax: 1 = NONE 2 = LIGHT 3 = MEDIUM 1 = NOT MARBLED 2 = MARBLED (Alaska)
4 = HEAVY
 Number of leaflet pairs: 1 = NOT PAIRED 2 = ONE 3 = TWO 4 = THREE OR MORE

6. STIPULES:

1 = LACKING 2 = PRESENT 1 = NOT CLASPING 2 = CLASPING
 1 = NOT MARBLED 2 = MARBLED Size (Compared with leaflets): 1 = SMALLER 2 = SAME
3 = LARGER
 Color (Compared with leaflets): 1 = LIGHTER 2 = SAME 3 = DARKER

7. FLOWER COLOR:

VENATION STANDARD WING KEEL 1 = WHITE 2 = GREENISH 3 = LAVENDER
4 = PURPLE 5 = RED
6 = OTHER (Specify)