No. 7600067

# 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.)

BEAN

'Cape'

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* 18th *day of* November *in the year of our Lord one thousand nine hundred and* seventy-six

*Attest:*

*Commissioner*
*Plant Variety Protection Office*
*Grain Division*
*Agricultural Marketing Service*

*Secretary of Agriculture*

## EXHIBIT A

## ORIGIN AND BREEDING HISTORY OF XP-B40 = Cape 1st 761005

1964 Original cross - University of Idaho Breeding Line XIDA3817 x BBL 274.

1964 through 1969 Segregating generations were grown and reselected to give a true breeding line which was designated XP-B40 in 1970.

1970 Trials, mass selection and increase.

1971 Trials, sampled to various processors.

1972 Grew several hundred progenies and removed all progenies that were not true to type. This has become our basic stock.

1972 through 1975 Testing for resistance to Curly Top and Rust, increase and very extensive trials.

Genetic Stability: XP-B40 is a stable line which is breeding true. The only variants found have been the normal percentage of flat podded and stringy podded plants. Both of these characteristics are due to single gene mutations and both are found in all round podded bean varieties that we have had experience with.



March 31, 1976

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 | 2. KIND NAME | FOR OFFICIAL USE ONLY | |
|---|---|---|---|
| 761085 XP B40 Cape Jet | Garden Bean | PV NUMBER 7600067 | |
| 3. GENUS AND SPECIES NAME | 4. FAMILY NAME *(Botanical)* | FILING DATE 4-13-76 | TIME 1:30 P.M. |
| Phaseolus vulgaris | Leguminosae | FEE RECEIVED $250.00 | BALANCE DUE $ — |
| | 5. DATE OF DETERMINATION 1969 | $250.00 | $ — |
| | | $250.00 | $ — |

| 6. NAME OF APPLICANT(S) | 7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* | 8. TELEPHONE AREA CODE AND NUMBER |
|---|---|---|
| Asgrow Seed Company | Kalamazoo, Michigan 49001 | (616) 385-6605 |

| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* | 10. STATE OF INCORPORATION | 11. DATE OF INCORPORATION |
|---|---|---|
| Corporation | Delaware | March 22, 1960 |

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
Unit 9630-190-1
Kalamazoo, Michigan 49001

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

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

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

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

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

[XX] 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 [ ] 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.

March 31, 1976
(DATE)

John A. Batcha
(SIGNATURE OF APPLICANT)

1

(DATE)

(SIGNATURE OF APPLICANT)

13 1976

## 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.

# EXHIBIT B

## BOTANICAL DESCRIPTION OF XP-B40 SNAP BEAN - Cape JEA 761005

XP-B40 is a Tendercrop type snap bean with pods quite similar to those of Tendercrop, Early Gallatin, and other Tendercrop type beans. This bean is resistant to Curly Top and was developed for use in Curly Top areas and also to facilitate seed production in areas where Curly Top can be a problem.

The plant is medium to large in size and is a determinate erect plant and the pods are borne well up in the plant. The leaves are large, dark green in color, wrinkled, medium in thickness, and have a dull color. The center leaflet is taper pointed and there is a slight pubescence on both leaf surfaces.

The pods are medium green, medium to large sieve, and average about 14 cm in length. The mature pods tend to be crease-back in that the width thickness index is only 9.0. The pods are somewhat curved, without constrictions and have a dull surface. The pod flesh is fairly light in color, with low fiber, no strings, and medium seed development. The pods are Tendercrop type and not Blue Lake.

The seed and flowers are white. Seed is kidney shaped and genetic seed quality is very good in that the seed is quite resistant to mechanical damage and transverse breaking of the cotyledons. Seed quality is far above average for Tendercrop type beans but not equal to Stretch (XP-B45).

XP-B40 has been tested repeatedly and has been found resistant to Curly Top. Dr. J. P. Meiners has tested the line for two years in Maryland and it has been resistant to rust there. It has also been reported to be resistant to rust in University of Tennesse trials.

XP-B40 has been in trial in many areas of the world for five years. There is a consistent report that it does well under cool, adverse conditions. This is definitely true at Twin Falls in that it does better in comparison to other varieties in adverse years. XP-B40 has been a consistently outstanding producer in the cooler areas of England. Thus we have described the line as resistant to cold.

Exhibit B is written from several years experience and is thus rather generalized due to the fact that conditions vary from year to year. Exhibit C is compiled from results of a one year replicated trial planted especially for PVP measurements where varieties can be compared in side by side plantings. Exhibits B and C therefore, compliment each other and may vary slightly.



March 31, 1976

FORM GR-470-12
(10-2-72)

FORM APPROVED. OMB NO. 40-R3712

EXHIBIT C
(Bean)

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

# OBJECTIVE DESCRIPTION OF VARIETY
## BEAN (*PHALEOLUS VULGARIS*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
ASGROW SEED COMPANY

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

FOR OFFICIAL USE ONLY

PVPO NUMBER 7600067

VARIETY NAME OR TEMPORARY DESIGNATION
XP-B40 = Cape Jet

761005

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:**

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

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

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

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

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

[7][1] GREEN PODS  [ ][ ] GREEN SHELLS  [ ][ ] DRY SEEDS

[ ][ ] NO. DAYS EARLIER THAN ---------- [ ]
[0][2] NO. DAYS LATER THAN ---------- [1]

1 = TENDERCROP  2 = KENTUCKY WONDER  3 = KINGHORN WAX
4 = WHITE KIDNEY  5 = MICHELITE 62  6 = DWARF HORTICULTURAL
7 = BUSH BLUE LAKE  8 = OTHER *(Specify)*

**4. PLANT:**

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

[0][4][8] CM. HEIGHT OR LENGTH OF VINE FROM PRIMARY LEAF NODE

[0][0][5] NUMBER PRIMARY BRANCHES PER MAIN STALK

[4][5] CM. SPREAD

[1] Branching habit: 1 = COMPACT  2 = OPEN

[0][6] NUMBER INTERNODES ON MAIN STALK BETWEEN PRIMARY LEAF AND BASE OF TERMINAL INFLORESCENCE

[0][2] CM. LENGTH OF FIRST INTERNODE ABOVE PRIMARY LEAF

[1][0] MM. STALK DIAMETER ABOVE FIRST TRIFOLIATE LEAF

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

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

**5. LEAVES:**

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

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

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

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

4

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

March 31, 1976

Cape: Yst
XP-B40 761005

**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 [4] NUMBER FLOWERS PER RACEME

**7. FRESH PODS:** *(Edible maturity, averages for 10 pods)*

[2] 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 4] CM. LENGTH [0 9] MM. WIDTH *(Between sutures)* [1 0] MM. THICKNESS [9 0] WIDTH / THICKNESS X 10

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

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

[2] Pubescence: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE

[1] Constrictions: 1 = NONE 2 = SLIGHT 3 = DEEP

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

[2] Surface: 1 = SHINY 2 = DULL

[1] Surface: 1 = SMOOTH 2 = BLISTERED

[1] Pod flesh: 1 = LIGHT 2 = DARK

[1] Pod flesh: 1 = FIRM 2 = WATERY

[12] MM. SPUR LENGTH

[2] Suture string: 1 = PRESENT 2 = ABSENT

[1] Fiber: 1 = NONE 2 = SPARSE 3 = CONSIDERABLE

[2] Seed development: 1 = SLOW 2 = MEDIUM 3 = FAST

[6] 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: [ ] Secondary color:
1 = WHITE 2 = YELLOW 3 = BUFF 4 = TAN
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

[2] Vein-like under coat pattern: 1 = ABSENT 2 = PRESENT

**9. SEED SHAPE AND SIZE:**

[1] Hilum view: 1 = ELLIPTICAL 2 = OVAL 3 = ROUND

[3] Side view: 1 = OVAL 2 = ROUND 3 = KIDNEY 4 = TRUNCATE ENDS

[4] Cross section: 1 = ELLIPTICAL 2 = OVAL 3 = CORDATE 4 = ROUND

[34] GM. WEIGHT PER 100 SEEDS

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

[0 6] MM. WIDTH *(Dorsal to ventral)*

[0 6] MM. THICKNESS *(Side to side)*

[1 4] MM. LENGTH

[0 1 0] WIDTH / THICKNESS X 10



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Asgrow Seed Company

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

Cape Set 761005

XP-B40

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

[1] FLOWERS [1] STEMS [1] PODS [1] SEEDS [1] LEAVES

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

| | | | |
|---|---|---|---|
| [2] | RUST *(Specify race)* Races found in Maryland and Tennesee. | [0] | ANGULAR LEAF SPOT |
| [0] | BACTERIAL WILT | [2] | COMMON BEAN MOSAIC |
| [0] | ANTHRACNOSE | [0] | YELLOW BEAN MOSAIC |
| [0] | SOUTHERN BEAN MOSAIC | [0] | FUSARIUM ROOT ROT |
| [2] | CURLY TOP | [2] | N.Y. 15 BEAN MOSAIC |
| [0] | POWDERY MILDEW | [0] | BEAN MOSAIC VIRUS 4 |
| [0] | HALO BLIGHT | [0] | FUSCOUS BLIGHT |
| [0] | ALFALFA MOSAIC VIRUS | [0] | ALFALFA MOSAIC VIRUS 2 |
| [0] | POD MOTTLE VIRUS | [0] | RED NODE VIRUS |
| [0] | ROOT KNOT NEMATODE | [ ] | OTHER *(Specify)* |

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

| | | | |
|---|---|---|---|
| [0] | APHIDS | [0] | LEAF HOPPERS |
| [0] | POD BORER | [0] | LYGUS |
| [0] | THRIPS | [0] | WEAVILS |
| [0] | SEED CORN MAGGOT | [ ] | OTHER *(Specify)* |

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

[0] HEAT [2] COLD [0] 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.



March 31, 1976

Asgrow Seed Company
Garden Beans XP B40

EXHIBIT D

PROOF OF NOVELTY OF XP-B40 SNAP BEAN Cape Set 761005

XP-B40 is a Tendercrop type bean and is quite similar to several varieties but is distinctly different from any variety with which we are familiar.

XP-B40 probably most nearly resembles Early Gallatan in plant and pod characteristics however, there are definite differences. They can be summarized as follows:

1. XP-B40 is resistant to Curly Top and Early Gallatin is susceptible.

2. XP-B40 is resistant to Rust in Maryland and Early Gallatin is susceptible.

3. XP-B40 pod length is considerably longer in yield trials at Twin Falls, Idaho.

| | Average Pod Length (MM) | | |
|---|---|---|---|
| | 1975 | 1974 | 1973 |
| XP-B40 | 143 | 150 | 151 |
| Early Gallatin | 130 | 133 | 130 |

4. XP-B40 has a larger sieve size. The following data were obtained from machine graded samples from yield trials at Twin Falls, Idaho.

% SIEVE 5 AND OVER

| Harvest Date | XP-B40 | Harvest Date | Early Gallatin |
|---|---|---|---|
| 8/11/75 | 65 | 8/11/75 | 53 |
| 8/ 9/74 | 61 | 8/10/74 | 40 |
| 8/10/73 | 61 | 8/10/73 | 43 |

There are similarities between XP-B40 and other Tendercrop varieties but to our knowledge no varieites have the combination of disease resistance and plant and pod characteristics found in XP-B40.

7

March 31, 1976

Asgrow Seed Company
subsidiary of The Upjohn Company

Research Department, Twin Falls
P.O. Box 1235
Twin Falls, Idaho 83301

Phone:
Filer, Idaho (208) 326-4321

June 25, 1976

Dr. Thaddeus E. Frey
Examiner, Plant Variety
Portection Office, Grain Division
United States Dept. of Agriculture
Beltsville, Maryland 20705

Dear Dr. Frey:

Subject: Bean Application No. 7600067, 'XP-B40'

Your letter of May 18, 1976 to John Batcha has been referred to me for answer.

You have asked for standard errors and sample sizes for the pod length and sieve size data given in Exhibit D.

The data regarding pod length in the original Exhibit D was from the total length of 10 sieve size 5 pods. In 1975, XP-B40, and Early Gallatin were compared by measuring 100 individual sieve size 5 pods of each variety. The data are as follows:

| | Sample Size | Average Pod Length | Standard Error |
|---|---|---|---|
| XP-B40 | 100 pods | 14.62 cM | 0.179 cM |
| Early Gallatin | 100 pods | 12.94 cM | 0.142 cM |

JEF 7/11/76

We are not able to furnish standard errors on sieve size. The yield plots are harvested and the entire sample is graded by means of a mechanical grader. The following data are the same as in Original Exhibit D except we have also given sample size.

% Sieve 5 and over.

| XP-B40 | | | Early Gallatin | | |
|---|---|---|---|---|---|
| Harvest Date | Sample Size | % 5 & Over | Harvest Date | Sample Size | % 5 & Over |
| 8/11/75 | 9885 gm | 65 | 8/11/75 | 4715 gm | 53 |
| 8/9/74 | 7140 gm | 61 | 8/10/74 | 7750 gm | 40 |
| 8/10/73 | 10210 gm | 61 | 8/10/73 | 10035 gm | 43 |

The sample size ranges from 10 to over 20 lbs. In all three years both varieties

Asgrow Seed Company

were planted in the same trial and on the same day. In 1973 and 1975 both varieties were harvested the same day but in 1974 Early Gallatin was harvested. One day later than XP-B40 but 40% of the Early Gallatin pods were sieve size 5 or larger as compared to 61% for XP-B40.

You have suggested that it would be advantageous if the races of rust could be listed to which 'XP-B40 is resistant. Dr. J. P. Meiners of the U. S. D. A. has been testing many varieties of beans at Salisbury and Beltsville, Maryland and Crossville, Tennessee. We are enclosing a copy of his latest report indicating that XP-B40 was highly resistant or resistant at all locations and in all years tested. Dr. Meiners does not identify the races of rust involved.

I have just talked to Dr. Meiners on the phone. He said that he would classify XP-B40 as resistant and Early Gallatin as susceptible to the reces of rust commonly found in Eastern United States. He further said that it would be easy to show that XP-B40 and Early Gallatin are definitely different simply by inoculating with rust found on the "Eastern Shore".

In addition to the above evidence XP-B40 is resistant and Early Gallatin susceptible to Curly Top virus.

Another difference which was not listed in the original Exhibit D concerns pod curvature. Although, we would like all of our beans to have perfectly straight pods, the pods of XP-B40' are somewhat curved and in Exhibit C we said that they were curved rather than straight or slightly curved. Early Gallatin pods are straight.

XP-B40 and Early Gallatin are very similar in many respects but very distinct in the following:

1. XP-B40 is resistant and Early Gallatin susceptible to "Curly Top".
2. XP-B40 is resistant and Early Gallatin susceptible to rust races commonly found in Eastern United States.
3. XP-B40 has significantly longer pods than Early Gallatin.
4. XP-B40 pods are considerably larger sieve size.
5. Early Gallatin pods are much straighter than those of XP-B40.

I believe that evidence presented in this letter should substantiate our claim that XP-B40 is a distinct and unique variety. If there are any further questions or need for additional data we will be happy to cooperate.

Thanks for your kind cooperation.

Sincerely yours,

John D Atkin

John D. Atkin, Ph.D.
Manager, Western Breeding Station

cc: John Batcha
Dr. J. P. Meiners
R. E. Strosnider

JDA/jp
Enclosure

Asgrow Seed Company
Garden Beans XP B40

EXHIBIT E

Statement of the Basis of Applicant's Ownership

Garden Beans, XP B40 Cape Test 761005

Garden Beans, XP B40, was originated and developed by Dr. C. G. Briggs and Dr. J. D. Atkin, Asgrow Plant Breeders. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the company. No rights to such invention, discovery, or development are retained by the employee.

March 31, 1976