No. 9400029

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## DEKALB Genetics Corporation

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, 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 TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC [illegible]LENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE [illegible] TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR [illegible]ING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE [illegible]RPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT [illegible] THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*SOYBEAN*

*'CX313'*

*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 thirty-first day of October in the year of our Lord one thousand nine hundred and ninety-five.*

*Attest:*

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

*[illegible]retary of Agriculture*

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0581-0055), Washington, 20250.

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

*(Instructions on reverse)*

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).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*: DEKALB Genetics Corporation
2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.: EX130
3. VARIETY NAME: CX313
4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*: 3100 Sycamore Road, DeKalb, IL 60115
5. PHONE *(Include area code)*: 815/758-3461

FOR OFFICIAL USE ONLY
PVPO NUMBER: 9400029
FILING — Date: Nov. 26, 1993; Time: 2:00 ☐ A.M. ☒ P.M.
FEES RECEIVED — Filing and Examination Fee: $2325.00; Date: Nov. 16, 1993; Certificate Fee: $300.00; Date: August 8, 1995

6. GENUS AND SPECIES NAME: Glycine max L. Merr.
7. FAMILY NAME *(Botanical)*: Leguminosae
8. CROP KIND NAME *(Common Name)*: Soybean
9. DATE OF DETERMINATION: Summer 1990
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: Corporation
11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Delaware
12. DATE OF INCORPORATION: June 15, 1988
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
Robert E. Roman, Jr., Assistant General Counsel
DEKALB Genetics Corporation
3100 Sycamore Road
DeKalb, IL 60115
PHONE *(Include area code)*: 815/758-3461

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*
- a. ☒ Exhibit A, Origin and Breeding History of the Variety.
- b. ☒ Exhibit B, Novelty Statement.
- c. ☒ Exhibit C, Objective Description of Variety.
- d. ☐ Exhibit D, Additional Description of Variety.
- e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
- f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____.
- g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

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 *(If "NO," skip to item 18 below)*

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," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____ .)
☒ NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES (If "YES," give names of countries and dates) U.S.A., spring 1993
☐ 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 *(Owner(s))* | CAPACITY OR TITLE | DATE |
|---|---|---|
| Robert Mark Lawson | Director, Research Operations | November 1, 1993 |
| SIGNATURE OF APPLICANT *(Owner(s))* | CAPACITY OR TITLE | DATE |
| | | |

Exhibit A

9400029

# ORIGIN AND BREEDING HISTORY
# CX313

CX313 is an F3 plant selection from the cross CX366 x MO211. Details of the breeding history and seed multiplication are as follows:

| | |
|---|---|
| Summer 1985 | Cross CX366 x MO211 was made. The cross was coded 6TC85. |
| Winter 1985-86 | F1 seed was grown. F1 plants were harvested and threshed to obtain F2 seed. F2 rows were grown. |
| Summer 1986 | F3 seed was grown (range 637, rows 21-36). Individual plants were harvested. |
| Summer 1987 | F4 seed (selection 6TC85-106) was grown (range 168, row 1). |
| Winter 1987-88 | F5 bulk seed (selection 6TC85-106) was grown (range 3, rows 37-40). |
| Summer 1988 | F6 bulk seed (selection 6TC85-106) was coded as SY80395 and was yield tested. |
| Summer 1989 | F7 bulk seed was yield tested. One hundred (100) pounds of source seed was produced. |
| Summer 1990 | SY80395 was yield tested. Four thousand one hundred fifty (4,150) pounds of breeder seed was produced. |
| Summer 1991 | SY80395 was renamed EX130 and yield tested. Forty-one thousand five hundred (41,500) pounds of foundation seed was produced. |
| Summer 1992 | EX130 was yield tested. Six hundred thousand (600,000) pounds of registered seed was produced. |
| February 5, 1993 | EX130 was named CX313. |

## STATEMENT OF UNIFORMITY AND STABILITY

CX313 was judged to be uniform for breeding use and testing after seven (7) generations. CX313 was been reproduced and judged uniform and stable for an additional three (3) generations.

## STATEMENT OF VARIANTS

CX313 may show a black hila variant of up to 3.0%. Besides the hila variant, CX313 shows no variation other than what would be normally expected due to environment or that would occur for almost any characteristic during the course of repeated sexual reproduction.

FORM APPROVED: OMB NO. 0581-0055

EXHIBIT C
*(Soybean)*

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

# OBJECTIVE DESCRIPTION OF VARIETY
## *SOYBEAN (Glycine max L.)*

| NAME OF APPLICANT(S) | TEMPORARY DESIGNATION | VARIETY NAME |
|---|---|---|
| DEKALB Genetics Corporation | EX130 | CX313 |

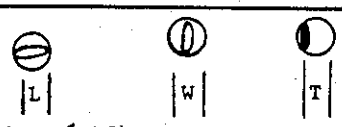
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
3100 Sycamore Road
DeKalb, IL 60115

FOR OFFICIAL USE ONLY
PVPO NUMBER
9400029

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

**1. SEED SHAPE:**

[1]




1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

**★ 2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

**3. SEED COAT LUSTER: (Mature Hand Shelled Seed)**

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

**★ 4. SEED SIZE: (Mature Seed)**

[1][8] Grams per 100 seeds

**★ 5. HILUM COLOR: (Mature Seed)**

[5] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____
NOTE: Black variant expected up to 3%.

**★ 6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

**★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[2] 1 = Low 2 = High

**★ 8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

**★ 9. HYPOCOTYL COLOR:**

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

**★10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

**11. LEAFLET SIZE:**

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

**12. LEAF COLOR:**

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[1] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[1] 1 = Gray 2 = Brown (Tawny)

**16. PLANT TYPES:**

[3] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0 6] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

**19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)**

FUNGAL DISEASES: (Continued)

★ [1] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Race 6 [0] Race 7

[0] Race 8 [0] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [1] Race 1 [1] Race 2 [1] Race 3 [1] Race 4 [1] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify)*: _____

**20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

★ [1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

**21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

**22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.**

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|---|---|---|---|
| Plant Shape | CX329 | Seed Coat Luster | CX366 |
| Leaf Shape | CX366 | Seed Size | CX366 |
| Leaf Color | CX291 | Seed Shape | CX366 |
| Leaf Size | CX366 | Seedling Pigmentation | CX366 |
| | | | |

**23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data**

| VARIETY | NO. OF DAYS MATURITY | PLANT LODGING SCORE | CM PLANT HEIGHT | LEAFLET SIZE | | SEED CONTENT | | SEED SIZE G/100 SEEDS | NO. SEEDS/ POD |
|---|---|---|---|---|---|---|---|---|---|
| | | | | CM Width | CM Length | % Protein | % Oil | | |
| Submitted | -1 | 1.8 | 95 | | | 34.6 | 18.9 | 18.2 | 3 |
| Name of Similar Variety CX329 | 0 | 1.7 | 90 | | | 35.7 | 18.6 | 18.0 | 3 |

**PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:**


1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-$A_2$ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Exhibit B



## NOVELTY STATEMENT

CX313 most closely resembles CX329; however, CX313 has gray pubescence and imperfect black hila, whereas CX329 has tawny pubescence and black hila.

Exhibit E

## STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

DEKALB Genetics Corporation is the sole, original, and first breeder of the soybean variety CX313.

9400029

**EXHIBIT E**

## Statement of the Basis of Applicant's Ownership

CX313 was originated and developed by a breeder employed by DEKALB Genetics Corporation. By agreement between DEKALB Genetics Corporation and the breeder, all rights to any invention, discovery, or development are assigned to DEKALB Genetics Corporation. No rights to such invention, discovery, or development are retained by the breeder.