No. 7100062

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Teweles 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 DESCRJPTIOS 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 IS THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO HE 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) XND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOK THE TERM OF seventeen TEARS 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 'ARIETY THEREFROM, 'TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'X-535

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* 24th *day of* January *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	2. KIND NAME	FOR OFFICIAL USE ONLY
XK-535	Soybean	PV NUMBER 7162
3. GENUS AND SPECIES NAME	4. FAMILY NAME *(Botanical)*	FILING DATE 4.7.71 / TIME 10:30 A.M. —
Glycine max	Leguminosae	FEE RECEIVED $ 250 / BALANCE DUE $ —
	5. DATE OF DETERMINATION	$ 250 / $ —
	October 1970	$ 250 / $ —

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
Teweles Seed Co. By Robert L. Teweles	1600 Oregon Street Muscatine, Iowa 52761	319-263-0142

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION
Teweles Seed Company	Wisconsin	1911

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

Mr. Robert L. Teweles
Teweles Seed Co.
1600 Oregon St.
Muscatine, Iowa 52761

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.

February 4, 1973 (DATE) — Robert L. Teweles (SIGNATURE OF APPLICANT)

(DATE) — (SIGNATURE OF APPLICANT)

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.

12A - XK-535 = Cayuga x Chippewa 64 (c)48

1966 Hand crossed F_1 seed obtained.

1967 F_1 plant grown out - F_2 seed obtained.

1967-68 F_2 seed grown out in Hawaii.

1968 F_3 individual plant selected, labeled Cayuga x Chippewa 64 (c)48, Clinton, Wisconsin.

1968-69 Sent 57 grams of seed from this single F_3 plant Cayuga x Chippewa 64(c)48 to Hawaii for winter increase. Obtained 1650 grams of F_4 seed for increase and trials.

1969 Tested this F_5 bulk line at three locations in replicated yield trials. Established an increase block 4 rows - 1200 feet long. Increase block was rogued for off-types and to establish variety type - 450 pounds of breeders stock seed produced.

1970 Tested line Cayuga x Chippewa (c)48 at two locations in replicated trials. Small commercial increase of 14.5 acres was checked for off-type plants. Line performance was satisfactory in yield trials and increase; assigned variety name of XK-535.

12B - Mature Plant Characteristics

Variety	Flower Color	Hilum Color	Pubes. Color	Plant Height	Plant Type	Phytophthora
XK-535 vs.	white	black	brown	37"	med.bush	resistant
Corsoy	purple	yellow	grey	34"	med.thin	susceptible
Amsoy	purple	yellow	grey	36"	med.thin	susceptible
Beeson	purple	imp. black	grey	38"	med.thin	resistant
*XK-520	purple	black	brown	36"	med.thin	resistant

*differs from XK-535 in flower color

FORM GR-470-2
(6-15-72)

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

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN *(GLYCINE MAX)*

Amended Exhibit C

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
RJS Teweles Seed Company by Wm. H. Davis

ADDRESS *(Street and No., or R.F.D. No.; City, State, and ZIP Code)*
Research Central
Route #1
Clinton, Wisconsin 53525

FOR OFFICIAL USE ONLY

PVPO NUMBER
7162

VARIETY NAME OR TEMPORARY DESIGNATION
XK-535

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE:
[1] 1 = SPHERICAL 2 = SPHERICAL FLATTENED 3 = ELONGATE 4 = OTHER *(Specify)*

2. SEED COAT COLOR:
[1] 1 = YELLOW 2 = GREEN 3 = BROWN 4 = BLACK 5 = OTHER *(Specify)*

SHADE:
[2] 1 = LIGHT 2 = MEDIUM 3 = DARK

3. SEED COAT LUSTER:
[2] 1 = DULL 2 = SHINY

4. SEED SIZE
[2 2] GRAMS PER 100 SEEDS

5. HILUM COLOR:
[6] 1 = BUFF 2 = YELLOW 3 = BROWN 4 = GRAY 5 = IMPERFECT BLACK 6 = BLACK 7 = OTHER *(Specify)*

SHADE:
[2] 1 = LIGHT 2 = MEDIUM 3 = DARK

6. COTYLEDON COLOR:
[1] 1 = YELLOW 2 = GREEN

7. LEAFLET SIZE *(See Reverse)*:
[2] 1 = SMALL 2 = MEDIUM 3 = LARGE

8. LEAFLET SHAPE:
[1] 1 = OVATE 2 = OBLONG 3 = LANCEOLATE 4 = ELLIPTICAL 5 = OTHER *(Specify)*

9. LEAF COLOR *(See reverse)*:
[2] 1 = LIGHT GREEN 2 = MEDIUM GREEN 3 = DARK GREEN

10. FLOWER COLOR:
[1] 1 = WHITE 2 = PURPLE 3 = OTHER *(Specify)*

11. POD COLOR:
[2] 1 = TAN 2 = BROWN 3 = BLACK

12. POD SET:
[1] 1 = SCATTERED 2 = CONCENTRATED

13. PLANT PUBESCENCE COLOR:
[2] 1 = GRAY 2 = BROWN 3 = OTHER *(Specify)*

SHADE:
[2] 1 = LIGHT 2 = MEDIUM 3 = DARK

14. PLANT TYPES *(See Reverse)*:
[3] 1 = SLENDER 2 = BUSHY 3 = INTERMEDIATE

15. PLANT HABIT:
[2] 1 = DETERMINATE 2 = INDETERMINATE 3 = OTHER *(Specify)*

16. HYPOCOTYL COLOR:
[1] 1 = GREEN 2 = PURPLE

17. SEED PROTEIN:
[ ] 1 = A 2 = B

18. NUMBER OF DAYS TO FLOWERING *(Place a zero in first box (e.g. [0 9]) when days are 9 or less.)*
[ ]

19. MATURITY GROUP:
[4] 1 = 00 2 = 0 3 = I 4 = II 5 = III 6 = IV 7 = V 8 = VI 9 = VII 10 = VIII

20. SIZE OF 10 DAY OLD SEEDLING GROWN UNDER CONSTANT LIGHT *(Growth Chamber)* **AT 25° C.** *(Place a zero in first box (e.g. [0 2]) when size is 9 mm. or less.)*
[ ] MM. LENGTH OF SEEDLING [ ] MM. LENGTH OF COTYLEDON [ ] MM. WIDTH OF COTYLEDON

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

[1] BACTERIAL PUSTULE	[0] SOYBEAN CYST	[0] DOWNY MILDEW	[2] PURPLE STAIN	[0] POD AND STEM BLIGHT	[0] ROOT KNOT
[0] FROGEYE	[0] STEM CANKER	[2] PHYTO-PHTHORA	[0] BROWN STEM ROT	[0] TARGET SPOT	[0] BROWN SPOT
[0] BUD BLIGHT	[0] WILDFIRE	[0] RHIZOCTONIA ROT	[ ] OTHER *(Specify)*		

****

No. 7162 (XK-535)
EXHIBIT D

XK-535 is most similar in describable characteristics to Chippews 64 and Cayuga, the parents used to obtain XK-535. Significant differences from both of these varieties are as follows:

CHARACTER DIFFERENCES

VARIETY	MATURITY	SEED COAT
XK-535	(1) Maturity Group II	(2) Seed Coat yellow-shiny
Chippewa 64	Maturity Group I	Seed coat yellow, shiny
Cayuga	Maturity Group I	Seed coat black

****

12E - Applicant is the actual breeder; ownership rights are granted to and held by the Teweles Seed Company.

RJS

FORM GR-470-2
(6-15-72)

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

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN *(GLYCINE MAX)*

Amended Exhibit C

INSTRUCTIONS: *See Reverse.*

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FOR OFFICIAL USE ONLY

PVPO NUMBER
7162

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4. SEED SIZE
[2 2] GRAMS PER 100 SEEDS

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[0] FROGEYE	[0] STEM CANKER	[2] PHYTO-PHTHORA	[0] BROWN STEM ROT	[0] TARGET SPOT	[0] BROWN SPOT
[0] BUD BLIGHT	[0] WILDFIRE	[0] RHIZOCTONIA ROT	[ ] OTHER *(Specify)*		

FORM GR-470-2 (REVERSE)

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	Chippewa 64	Petiole angle	Cayuga
Leaf shape	Cayuga	Seed size	Cayuga
Leaf color	Cayuga	Seed shape	Chippewa 64
Leaf surface	Cayuga	Seedling pigmentation	Chippewa 64

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	NO. OF DAYS TO MATURITY	LODGING SCORE	PLANT HEIGHT	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted	118	1.8	35"			40.4	21.9%		
Name of similar variety Amsoy	117	1.9	36"			39.5	23.0		

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. Scott, Walter O. and Samuel R. Aldrich, 1970, Modern Soybean Production, The Farmer Quarterly.
2. Norman, A. G., 1963, The Soybean: Genetics, Breeding, Physiology, Nutrition, Management.
3. McKie, J. W., and K. L. Anderson, 1970, The Soybean Book.

LEAF COLOR: Nickerson's or any recognized color fan may be used to determine the leaf color of the described variety. The following Soybean varieties may be used as a guide to identify the colors listed on the form.

COLOR	VARIETY
Light Green	"Ada"
Medium Green	"Wilkin"
Dark Green	"Swift"

LEAF SIZE: The following varieties may be used as a guide to identify the relative size leaves.

SIZE	VARIETY
Small	"Amsoy"
Medium	"Bonus"
Large	"Anoka"

PLANT TYPE: The following varieties may be used as a guide to identify the plant type.

TYPE	VARIETY
Slender	"Vansoy"
Intermediate	"Wirth"
Bushy	"Adelphia"