No. 7300085

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup, King and 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, R IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT RIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. HE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS SS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS D BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S 1474'

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* 26th *day of* February *in the year of our Lord one thousand nine hundred and* seventy-four

Attest:

S. R. Rollin

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Earl L Butz

Secretary of Agriculture

FORM GR-470
(2-12-71)

UNITED STATES DEPARTMENT OF AGRICULTURE
CONSUMER AND 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 ~~Exp. E0-9210~~ S1474 R/S	2. KIND NAME Soybeans	FOR OFFICIAL USE ONLY PVPO NUMBER 73085
3. GENUS AND SPECIES NAME Glycine max (L.) Merrill	4. FAMILY NAME (*Botanical*) Leguminosae	FILING DATE 4-16-73 / TIME 12:30 ~~A.M.~~ P.M.
	5. DATE OF DETERMINATION January 1970	FEE RECEIVED $250.00 / CHARGES
6. NAME OF APPLICANT(S) Northrup, King & Co.	7. ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*) P. O. Box 959 Minneapolis, Minnesota 55440	8. TELEPHONE AREA CODE AND NUMBER 612-781-8011
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*) Corporation	10. STATE OF INCORPORATION Minnesota	11. DATE OF INCORPORATION 1896

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

Allenby L. White
Northrup, King & Co.
P. O. Box 959
Minneapolis, Minnesota 55440

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

[X] 12A. Exhibit A, Origin and Breeding History of the Variety (*See Section 52, P.L. 91-577*)

[X] 12B. Exhibit B, Botanical Description of the Variety

[ ] 12C. Exhibit C, Objective Description of the Variety

[X] 12D. Exhibit D, Data Indicative of Novelty

[X] 12E. Exhibit E, Statement of the Basis of Applicant's Ownership

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. (*See Section 52, P.L. 91-577*).

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), P.L. 91-577*) (*If "Yes," answer 14B and 14C below.*) [X] YES [ ] NO PER LETTER 5/4/73

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? Three

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

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 (P.L. 91-577).

April 5, 1973
(DATE)

(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

EXHIBIT A S1474 RJS

ORIGIN AND BREEDING HISTORY OF ~~EXP. E0-9210~~ SOYBEANS

1969 60 plants were selected from an F_4 bulk population from the cross 'Hark' x 'Wayne'. The population had been advanced to the F_4 generation by harvesting pods from approximately 400 plants in each generation.

1969-70 Seeds from each selected plant were grown in a progeny row. One of these was designated ~~E0-9210~~ S1474. Each row was bulk-harvested if uniform.

1970 ~~E0-9210~~ S1474 was yield-tested at Hudson, Iowa. On the basis of its uniformity, high yields and maturity (Group II), it was chosen as an experimental variety worthy of further testing.

1971 ~~E0-9210~~ S1474 was yield-tested at Hudson, Iowa; Dayton, Iowa; Washington, Iowa and Lima, Ohio. A small increase block of ~~E0-9210~~ S1474 was planted at Washington, Iowa. This block was carefully rogued for off-type plants and 210 pounds of seed were produced.

1971-72 Seed was further increased during the winter in Argentina and Hawaii.

1972 ~~E0-9210~~ S1474 was yield-tested in Northrup King trials at Stanton, Minnesota; Hudson, Dayton and Washington, Iowa and Dixon and Waverly, Illinois. It was also tested in University trials in Iowa, Illinois and Wisconsin. A further seed increase was made using the seed harvested in 1971 and in the winter of 1971-72. This field was carefully rogued. Also, 200 plants were harvested individually and these will be grown in progeny rows in 1973. Any rows containing off-type plants will be discarded; the rest will be bulk-harvested to produce pedigree seed of the variety. This pedigree method of maintaining varietal purity will continue as long as the variety is produced.

~~E0-9210~~ S1474 is stable for all normal descriptive characteristics. A very low frequency of variants would be expected through mutation, outcrossing or mechanical mixture. These will be prevented from becoming a significant constituent of the variety through application of the time-proven pedigree method referred to above.

NORTHRUP, KING & CO.
1500 JACKSON ST., N.E. MINNEAPOLIS, MINN. 55413

EXHIBIT B S1474
BOTANICAL DESCRIPTION OF ~~EXP. E0-9210~~ SOYBEANS

I. Seed.

Cotyledons of S1474 ~~E0-9210~~ are yellow. Seeds have a dull yellow coat and a medium to dark brown hilum. Seed size is similar to Corsoy (3,200 seeds per pound for both S1474 ~~E0-9210~~ and Corsoy in 1972 Iowa State University yield trials, and 18 grams per 100 seeds for both in Northrup King trials). Seed shape is nearly spherical, or similar to Corsoy.

II. Seedling.

When grown for 10 days at 25° C. under constant light, seedlings of S1474 ~~E0-9210~~ averaged 124 mm in length compared to 114 mm for Hark and 134 mm for Wayne. Length of cotyledon for S1474 ~~E0-9210~~ was 15.4 mm compared to 15.0 mm for Hark and 16.2 mm for Wayne. Width of cotyledon was 8.5 mm for S1474 ~~E0-9210~~ compared to 8.0 mm for Hark and 9.3 mm for Wayne.

Seedlings of S1474 ~~E0-9210~~ have excellent field emergence, receiving a score of 1 (1 = excellent, 5 = very poor) in Iowa State University trials compared to Hark = 2, Wayne = 1, Amsoy = 5, and Beeson = 5.

Hypocotyl color of S1474 ~~E0-9210~~ is purple.

III. Flowering.

When planted about May 15, S1474 ~~E0-9210~~ will begin flowering in about 45 days at Washington, Iowa, about the same as for Amsoy. Duration of flowering is similar to Amsoy and flowering pattern is similar to other indeterminate, uniform Group II varieties. Flower color is purple.

IV. Fruiting.

Flowering and beginning pod set overlap, as is true of S1474 other indeterminate varieties. At full vegetative growth, S1474 ~~E0-9210~~ has medium sized, ovate leaflets which are a medium green color. Canopy type is intermediate between the narrow, open canopy parent, Hark, and the bushy, closed canopy parent, Wayne.

V. Disease Reaction.

S1474 ~~E0-9210~~ is moderately susceptible to the leaf disease Bacterial Blight, Bacterial Pustule and Brown Spot.

FORM GR-470 (REVERSE)

RECEIVED APR 16 1973 U.S. DEPARTMENT AMS, GRAIN DIV. PVPO

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $50.00 fee to U.S. Dept. of Agriculture, Consumer and Marketing Service, Grain Division, Hyattsville, Maryland 20782. Retain one copy for your files. All items on the face of the form are self-explanatory unles noted below.

ITEM

5 Insert the date the applicant determined that he had a new variety.

12a 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.

12b 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.

12c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

12d Provide complete data indicative of novelty. Seed and plant specimens may be submitted and seeds submitted may be sterile. Where possible, include photographs of plant comparisons, chemical tests, etc.

12e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

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)*

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Northrup, King & Co.

ADDRESS *(Street and No., or R.F.D. No.; City, State, and ZIP Code)*
P. O. Box 959
Minneapolis, Minn. 55440

FOR OFFICIAL USE ONLY
PVPO NUMBER
73085

VARIETY NAME OR TEMPORARY DESIGNATION
~~Exp. EO-9210~~ S1474 R/S

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:
[1] 1 = DULL 2 = SHINY

4. SEED SIZE
[1 4] GRAMS PER 100 SEEDS

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

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

12. POD SET:
[2] 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:
[2] 1 = GREEN 2 = PURPLE

17. SEED PROTEIN:
[2] 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.)*
[4 5]

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.)*
[1 2 4] MM. LENGTH OF SEEDLING
[1 5] MM. LENGTH OF COTYLEDON
[0 8] MM. WIDTH OF COTYLEDON

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

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

VI. Mature Plant.

~~E0-9210~~ S1474 has tawny or brown pubescence and brown pods. Plant height averages about 2 inches taller than Corsoy and about 3 inches shorter than Amsoy. Lodging averages about the same as for Corsoy (E0-9210 = 2.4, Corsoy = 2.6 in NK trials). Most pods are 2 or 3 seeded, and there are normally several pods per node, depending upon the yield level. In NK trials, ~~E0-9210~~ S1474 averages 44.7 bushels per acre, vs. 41.2 for Corsoy, 42.1 for Amsoy and 41.5 for Beeson. Maturity is about one day earlier than Amsoy.

FORM GR-470-2 (REVERSE)

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape	Corsoy	Petiole angle	Amsoy
Leaf shape	Amsoy	Seed size	Corsoy
Leaf color	Wayne	Seed shape	Corsoy
Leaf surface	Wayne	Seedling pigmentation	Calland

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	129	2.4	41 in.	2 in.	4 in.	39.0	18.1 %	24 at 140,000 plt/a	131
Name of similar variety Corsoy	127	2.6	39 in.	2 in.	3.75	37.7	18.7	23 at 140,000 plt/a	137

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"

13D. Exhibit D:

'S 1474'
'~~Exp. EO-9210~~' is most similar to 'Corsoy' in seed size, seed quality, seedling vigor, leaf shape, plant habit, and resistance to lodging. It is similar to 'Hark' in seed protein type and protein content. The seeds of
'S 1474'
'~~Exp. EO-9210~~' contain 1.3% more protein than 'Corsoy'; the leaves are darker green; and the plants are 5 cm. taller. The combination of characteristics found in 'S 1474'
'~~EXp. EO-9210~~' differs from all presently released soybean varieties.

Allerley R White
Vice-President
Northrop King & Co

NORTHRUP, KING & CO.
1500 JACKSON ST., N.E. MINNEAPOLIS, MINN. 55413

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

The ~~experimental~~ soybean variety, ~~E0-9210~~ S1474, was developed by Northrup, King & Co.'s breeding staff at its Washington, Iowa research farm from germ plasm sources cited in Exhibit A of this application. Northrup, King & Co. believes that the experimental variety it has created is novel as defined in the Plant Variety Protection Act and, therefore, that Northrup, King & Co. is the sole owner of the variety.

EXHIBIT D
DATA INDICATIVE OF NOVELTY FOR E0-9210 SOYBEANS

I. Seed.

A. Seed Description.

Seed of E0-9210 has dull yellow seed coats and yellow cotyledons, medium to dark brown hilums and is nearly spherical in shape.

B. Seed Size.

Variety	Wt. in Gms. 100 Seeds *
E0-9210	14.2
Hark	15.6
Corsoy	14.2
Amsoy	17.4
Wayne	17.4

* Iowa State University Data

C. Chemical Composition of Seed.

Variety	Protein %	Oil %	Iodine No.
E0-9210	39.0	18.1	131
Hark	38.8	18.0	135
Corsoy	37.7	18.7	137
Wayne	38.2	18.4	-

D. Seed Protein (Larson and Caldwell; Crop Science 9:385).

E0-9210, Hark and Wayne all have B type.

II. Seedling.

A. Hypocotyl color - purple.

B. Size of 10-day old seedlings under constant light at 25° C.

Variety	Seedling Length (mm)	Cotyledon Length (mm)	Cotyledon Width (mm)
E0-9210	124.7	15.4	8.5
Hark	113.5	15.0	8.0
Corsoy	129.0	15.5	8.5
Wayne	133.5	16.2	9.3

C. Seedling Emergence Score.

Variety	Score *
E0-9210	1
Hark	2
Corsoy	1
Amsoy	5
Beeson	5
Wayne	1

* Iowa State University Data

1 = Excellent. 5 = Very Poor.

III. Leaf and Canopy.

A. Leaf Characteristics.

Variety	Leaf Color	Leaf Shape	Leaf Width (in.)	Leaf Length (in.)
E0-9210	Medium	Ovate	2	4
Hark	Medium	Ovate, but narrow	1 3/4	3 1/4
Corsoy	Light	Ovate	2	3 3/4
Amsoy	Medium	Ovate	2	4
Wayne	Medium	Ovate	3	4 1/2

B. Canopy and Growth Characteristics.

Variety	Canopy Openness	Canopy Shape	Determinancy
E0-9210	Intermediate	Intermediate	Indeterminate
Hark	Open	Slender	Indeterminate
Corsoy	Intermediate	Intermediate	Indeterminate
Amsoy	Intermediate	Intermediate	Indeterminate
Wayne	Closed	Bushy	Indeterminate

IV. Flower Color - purple.

V. Mature Plant.

A. Description. E0-9210 has tawny pubescence and brown pods.

B. Agronomic Data

Variety	Yield* (70-72)	Lodging* (70-72)	Plant Height** (70-72)
E0-9210	44.7	2.4	41
Corsoy	41.2	2.6	39
Amsoy	42.1	2.8	44
Beeson	41.5	2.3	41

* Average of 9 tests. ** Average of 7 tests.

VI. Disease Reaction.

A. Not resistant to common Pustule Blight or Brown Spot but expected to be similar in reaction to other currently grown varieties.

B. Not resistant to Rhizoctonia, Pythium and Fusarium root rots.

C. Not resistant to Phytophthora root rot but has better tolerance to the disease than Amsoy or Corsoy.

D. Not resistant to Brown Stem Rot but similar in reaction to other currently grown varieties.

E. Not resistant to Cyst and Root Knot Nematodes but resistance is not considered important in the areas of adaptation for E0-9210.