No. 8100146

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Northrup King 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 EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, 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.)

*SOYBEAN*

*'S09-90'*

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* 17th *day of* June *in the year of our Lord one thousand nine hundred and* eighty-two.

*Attest:*

Kenneth A. Evans
Acting
*Commissioner*
*Plant Variety Protection Office*
*Grain Division*
*Agricultural Marketing Service*

John R Block
*Secretary of Agriculture*

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

# APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

**INSTRUCTIONS:** *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

| 1a. TEMPORARY DESIGNATION OF VARIETY | 1b. VARIETY NAME | FOR OFFICIAL USE ONLY | |
|---|---|---|---|
| 503149 | S09-90 | PV NUMBER 8100126 | |
| 2. KIND NAME: Soybean | 3. GENUS AND SPECIES NAME: Glycine Max | FILING DATE: 7/17/81 | TIME: 12:00 A.M. P.M. |
| 4. FAMILY NAME (BOTANICAL): Leguminosae | 5. DATE OF DETERMINATION: March, 1979 | FEE RECEIVED: $ 500.00 / $ 250.00 | DATE: 7/17/81 / 4/27/82 |
| 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, MN 55440 | | 8. TELEPHONE AREA CODE AND NUMBER: 612-781-5305 |

| 9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (*Corporation, partnership, association, etc.*) | 10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION | 11. DATE OF INCORPORATION |
|---|---|---|
| Corporation | Delaware | 1896 |

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:
Robert W. Romig
Northrup King Co.
P. O. Box 959
Minneapolis, MN 55440

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, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 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 [X] NO

| 14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? | 14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? |
|---|---|
| [ ] YES [ ] NO | [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED |

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*
RJS 2/9/82

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] 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? [X] 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.

July 15, 1981 (DATE) — Robert W. Romig (SIGNATURE OF APPLICANT)

1

(DATE) — (SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

**EXHIBIT A**

**ORIGIN AND BREEDING HISTORY OF S09-90 SOYBEAN**

1970-1972 A population was developed by crossing Amsoy 71 with a very early plant introduction, PI 189868, growing the $F_1$ population, and selecting for early plants in the $F_2$ generation. These early flowering segregates were backcrossed to Amsoy 71. Two backcrosses were made with selection for earliness and agronomic desirability.

1973-1974 The population (Amsoy 71 $^{(3)}$ x PI 189868) was advanced to $F_5$. Selection for earliness was practiced in the $F_2$; $F_3$ and $F_4$ generations were advanced by modified single seed descent. In September, 1975, 100 early plants were selected and threshed individually.

1975 100 progeny rows were grown. One of these, numbered 503149, was selected based on earliness, agronomic appearance, and uniformity to be tested in a preliminary yield trial.

1976-1977 503149 was tested in preliminary yield trials at Stanton, Minnesota (1976 and 1977); Minnesota Lake, Minnesota; Hudson, Iowa; and Washington, Iowa (latter 3 - 1977 only). Based on performance in these trials, 503149 was chosen for initial increase. A 500-gram sample of seed was hand rogued for off-types. Hilum color was identified as predominantly yellow, seed coat luster as shiny.

1978 503149 was tested at 6 midwestern locations and found to have superior performance. Its maturity (Group 0), hilum color, and seed coat luster were verified. The line was found to have purple flowers, grey pubescence, and tan pods like the recurrent parent, Amsoy 71. It was tested in the laboratory for reaction to Phytophthora megasperma, Race 1, and found to be resistant (23 resistant, 0 susceptible).

A small seed increase was made from the hand-rogued seed mentioned above. Three plants with white flowers and a few plants which seemed slightly taller than the majority were removed. Descriptive characteristics were verified.

1979 503149 was tested at 8 midwestern locations. Maturity group, hilum color, pod color, pubescence color and flower color were verified, both in yield trials and in a breeder seed production block grown from seed produced in 1978. A few plants with tawny pubescence and a few which seemed later than the majority were removed. The breeder seed was examined and found to contain from 0.5 to 1.0% buff or imperfect black hilum. This variety subsequently was named S09-90.

Examination of S09-90 in four years of yield testing and two years of seed increase has shown no significant variation other than that normally encountered within a variety except for hilum color. Occasional off-types with tawny pubescence or white flowers have been found, but can be attributed to mechanical mixture. Occasional seeds with buff and imperfect black hilum color have been found, and may constitute up to 1.0% of the variety.

Off-types will be prevented from increasing in frequency by use of pedigree purification as needed.

Foundation seed of S09-90 has been inspected and approved by the Iowa Crop Improvement Association.

**EXHIBIT B**

**NOVELTY STATEMENT FOR S09-90 SOYBEAN**

S09-90 is most similar to "Evans." It can be differentiated from Evans by flower color and seed coat luster. Evans has white flowers and dull seed coats; S09-90 has purple flowers and shiny seed coats.

FORM APPROVED OMB NO. 40-R3822

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

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, MN 55440

FOR OFFICIAL USE ONLY
PVPO NUMBER 8[illegible]46

VARIETY NAME OR TEMPORARY DESIGNATION
S09-90

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][0] GRAMS PER 100 SEEDS

**5. HILUM COLOR:** [2] 1 = BUFF 2 = YELLOW 3 = BROWN 4 = GRAY 5 = IMPERFECT BLACK 6 = BLACK 7 = OTHER *(Specify)* May contain up to 1% bluff or Imp. bl.
SHADE: [ ] 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:** [1] 1 = TAN 2 = BROWN 3 = BLACK

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

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

**19. MATURITY GROUP:** [2] 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 | [1] SOYBEAN CYST | [1] DOWNY MILDEW | [1] PURPLE STAIN | [1] POD AND STEM BLIGHT | [0] ROOT KNOT |
| [0] FROGEYE | [1] STEM CANKER | [2] PHYTOPHTHORA Race 1, 2 & | [1] BROWN STEM ROT | [0] TARGET SPOT | [1] BROWN SPOT |
| [0] BUD BLIGHT | [0] WILDFIRE | [1] RHIZOCTONIA ROT | [ ] OTHER *(Specify)* ____ | | |

FORM LPGS-470-2 (5-78) (Formerly Form GR-470-2, which may be used)

8100146

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|---|---|---|---|
| Plant shape | Amsoy 71 | Petiole angle | Amsoy 71 |
| Leaf shape | Amsoy 71 | Seed size | Amsoy 71 |
| Leaf color | Amsoy 71 | Seed shape | Amsoy 71 |
| Leaf surface | Amsoy 71 | Seedling pigmentation | Amsoy 71 |

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 | 119 | 2.7 | 69 cm | 4.0 cm | 8.9cm | 40.5 | 22.1 % | 17 | |
| Name of similar variety | 117 | 2.9 | 69 cm | 5.4 cm | 9.5cm | 41.4 | 22.4 | 17 | |

## 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" |

## EXHIBIT D

## ADDITIONAL DESCRIPTION OF S09-90 SOYBEAN

S09-90 is a late maturity Group 0 cultivar maturing somewhat later than Evans. It was developed by crossing Amsoy 71 to an early strain, PI 189868, and backcrossing twice to Amsoy 71 while selecting for earliness. Thus, the strain is similar to Amsoy 71 in coloration of plants, leaves, and seed. Growth characteristics do not resemble those of Amsoy 71 because they are influenced by maturity. S09-90 is considerably earlier than Amsoy 71 (Group 0 vs. Group II).