No. 9300184

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Northrup King Co.

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 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 CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSES, 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

'S42-32'

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 August in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary 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)*: Northrup King Co.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.: X9242, J701017

3. VARIETY NAME: S42-32

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*: P. O. Box 949, Washington, Iowa 52353-0949, Attention: Dr. John C. Thorne

5. PHONE *(include area code)*: 319-653-6645

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9300184

FILING — Date: Mar. 31, 1993 — Time: ☐ A.M. ☐ P.M.

FEES RECEIVED — Filing and Examination Fee: $ 2325.00 — Date: Mar. 31, 1993 — Certificate Fee: $ 300.00 — Date: July 11, 1995

6. GENUS AND SPECIES NAME: Glycine max

7. FAMILY NAME *(Botanical)*: Leguminosae

8. CROP KIND NAME *(Common Name)*: Soybean

9. DATE OF DETERMINATION: November, 1987

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: 1976

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Dr. John C. Thorne
Northrup King Co.
P. O. Box 949
Washington, Iowa 52353-0949

PHONE *(include area code)*: 319-653-6645

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. [X] Exhibit A, Origin and Breeding History of the Variety.
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety
d [ ] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership.
f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
g. [X] 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)
☒ 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
John C Thorne	Soybean Research Director	3-22-93
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE

EXHIBIT A

Origin and Breeding History of the Variety

The soybean variety 'S42-32' is derived from the cross 'MO2050' x 'A5474'. The cross was made in the summer of 1983 by the Northrup King Co. soybean research staff at St. Joseph, IL. The F1 and F2 generations were grown at the Northrup King Co. Research Center at Waimea, Kauai, HI in the winter of 1983-84. The F3 was grown at Joseph in the summer of 1984, the F4 and F5 at Waimea in 1984-85, and the F6 at St. Joseph in the summer of 1986. The F2, F4, and F5 generations were advanced by harvesting 2-4 seeds from each plant and planting a 600 seed sample from the bulk. Mass selection for Group IV or earlier Maturity was practiced in the F3 and F6. In the fall of 1986 approximately 100 F6 plants of Group IV or earlier maturity were harvested and threshed individually. The progeny from these plants were grown in F7 progeny rows in the summer of 1987. One of these, numbered J701017, was selected on the basis of agronomic appearance to be tested in a preliminary yield trial in 1988. This line was subsequently tested under the temporary designation X9242 and named S42-32. It has been tested at several midwestern U.S. locations from 1989 to 1991 and found to yield well compared to other early Maturity Group IV cultivars. Descriptive traits including white flowers, grey pubescence, brown pods, and yellow hilum have been identified and confirmed. S42-32 has been tested in fields known to be infested with cyst nematode near Conesville, IA and Champaign, IL, and found to be resistant. Resistance to Races 3 and 14 have been confirmed in Greenhouse tests at the Northrup King facility in Bay, AR, and by Dr. Lawrence Young, USDA plant pathologist, and Jackson, TN. It has been tested for reaction to Races 1, 3, 4, and 7 of Phytophthora megasperma using hypocotyl inoculation of greenhouse grown plants and found to have the Rps1-C gene for resistance.

In the winter of 1989-90, 300 seeds of S42-32 were planted at Waimea. At harvest, 100 plants were harvested and threshed individually and their progeny planted at St. Joseph in the summer of 1990 to monitor variability and to produce Pedigree Seed. A few plants with purple flowers or tawny pubescence were removed. These plants were assumed to have come from admixture or out-crossing. Six rows which appeared to be later in maturity were also removed. The remaining uniform rows were bulked to produce Pedigree Seed. This seed was planted in 1991 to produce Breeder Seed. The increase block was rogued carefully during flowering and at maturity.

Foundation Seed of S42-32 was produced in 1992. The Iowa Crop Improvement Association inspected the fields and found them to meet the standards for Foundation Seed. The National Soybean Variety Review Board approved the variety for Certification on December 10, 1992.

S42-32 is a stable and uniform variety except for minor environmentally induced variation encountered in any soybean variety. In five years of testing and three years of seed increase, no other variants have been observed. Any off-type plants which

were removed from increase fields were assumed to have arisen from admixture or outcrossing.

Varietal purity will be maintained using progeny rows as described above as needed.

EXHIBIT B

Novelty Statement for the Variety

Soybean variety S42-32 is most similar to Fayette, Linford, and S39-11. It can be differentiated from these varieties on the basis of pubescence color. S42-32 has grey pubescence, while Fayette, Linford, and S39-11 have tawny pubescence.

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
Northrup King Co.	X9242, J701017	S42-32

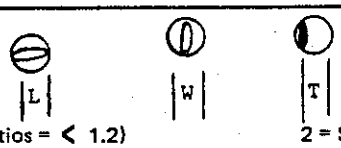
ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
P. O. Box 949
Washington, IA 52353-0949
Attention: John C. Thorne

FOR OFFICIAL USE ONLY
PVPO NUMBER 9300184

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]).

1. SEED SHAPE:

[2]



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][6] Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

[2] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

May contain up to 2% other hilum color

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:

[1] 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:

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

14. POD COLOR:

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

15. PLANT PUBESCENCE COLOR:

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

16. PLANT TYPES:

[2] 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:

[ ][7] 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:

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

[1] Bacterial Blight *(Pseudomonas glycinea)*

[ ] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

[1] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

[ ] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [1] Other *(Specify)* Common Arkansas Race

[ ] Target Spot *(Corynespora cassiicola)*

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

[ ] Powdery Mildew *(Microsphaera diffusa)*

[2] Brown Stem Rot *(Cephalosporium gregatum)* Moderately Resistant

[ ] 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)*

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

[ ] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

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

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

VIRAL DISEASES:

[ ] Bud Blight (Tobacco Ringspot Virus)

[ ] Yellow Mosaic (Bean Yellow Mosaic Virus)

[ ] Cowpea Mosaic (Cowpea Chlorotic Virus)

[ ] Pod Mottle (Bean Pod Mottle Virus)

[ ] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

[ ] Race 1 [ ] Race 2 [2] Race 3 [ ] Race 4 [2] Other *(Specify)* Race 14 (Moderate)

[ ] Lance Nematode *(Hoplolaimus Colombus)*

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

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

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

[ ] 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)

[ ] Mexican Bean Beetle *(Epilachna varivestis)*

[ ] 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	Fayette	Seed Coat Luster	S42-50
Leaf Shape	A3935	Seed Size	Pioneer 9442
Leaf Color	S42-50	Seed Shape	S39-11
Leaf Size	S35-35	Seedling Pigmentation	S42-50

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	130	2.8	93	6.6	11.0	39.6	22.8	15.6	2-3
S42-50 Name of Similar Variety	131	2.5	84	7.1	12.2	39.9	22.2	14.9	2-3

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.

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EXHIBIT E

Statement of the Basis of Applicant's Ownership

Soybean variety S42-32 was developed from germplasm sources cited in Exhibit A of this application. Northrup King Co. believes that the variety is novel as defined in the Plant Variety Protection Act and, therefore, that Northrup King Co. is the sole owner of the variety.