No. 8700109

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

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 TY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'AP 3773'

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* 18th *day of* December *in the year of our Lord one thousand nine hundred and* eighty-seven.

Attest:

Kenneth A. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng

Secretary of Agriculture

APPROVAL EXPIRES 4-30-88

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0065

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).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) Nickerson American Plant Breeders	2. TEMPORARY DESIGNATION	3. VARIETY NAME AP 3773
4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)* 5201 Johnson Drive P.O. Box 2955 Mission, KS 66205	5. PHONE *(Include area code)* (913) 384-4940	FOR OFFICIAL USE ONLY PVPO NUMBER 8700109
6. GENUS AND SPECIES NAME Glycine Max	7. FAMILY NAME *(Botanical)* Leguminosae	FILING: DATE April 1, 1987; TIME 2:00 ☐ A.M. ☑ P.M.
8. KIND NAME Soybean	9. DATE OF DETERMINATION January 1984	FEES RECEIVED: AMOUNT FOR FILING $1800.00; DATE March 30, 1987
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)* Corporation		AMOUNT FOR CERTIFICATE $200.00; DATE October 22, 1987
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION April 1, 1983

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

Wayne Ellingson, Director of Soybean Research
AgriPro Seeds
R.R. #2, Hwy 30 East
Ames, Iowa 50010

PHONE *(Include area code)*: (515) 232-0691

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.

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

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," give date)* ☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

A small quantity of seed was sold in the spring of 1986

☒ Yes *(If "Yes," give names of countries and dates)* U.S.A. ☐ 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 Wayne R. Ellingson	DATE 12/29/86
SIGNATURE OF APPLICANT RE Heemer	DATE 1/5/87

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FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

"EXHIBIT A"
ORIGIN AND HISTORY OF 'AP 3773'

1. AP 3773 originated in Indiana from a hand pollinated cross of 'Amsoy 71' and 'Elf'. The cross was made during the summer of 1978. The F1, F2 and F3 generations were grown in Brazil during 1978-80. F2 and F3 generations were advanced using a modified single seed decent technique. The F4 generation was grown in Indiana during the summer of 1980. Single plants of the cross were selected and seed was planted as a progeny row in 1981.

2. In 1982, single plants of the variety were reselected and grown as progeny rows in Puerto Rico during the winter of 1982-83. Only rows conforming to a standard were harvested. Seed from each progeny row were planted as mini-bulks in Iowa the summer of 1983. Only the mini-bulks conforming to a standard were harvested and bulked. The genetic make-up of the variety has remained stable and the sole purpose of the reselection was for beginning multiplication for commercial seed stock production. The variety was not essentially changed, but only mixtures removed that occurred during yield testing.

3. AP 3773 has been yield tested since 1982. See the attached for 1983-86 data. AP 3773 has been tested under the experimental designation 78088-B81-31052 or AP 3773.

4. Discernible variants are not an inherent component of the variety.

"EXHIBIT B"

Novelty is based on the unique combination of the following characters:

AP 3773 is most similar to the variety 'Harper'. However, AP 3773 differs from Harper in Phytophthora reaction, peroxidase activity and emergence score.

1. AP 3773 is resistant to races 1 and 2 Phytophthora root rot where Harper is susceptible.

2. AP 3773 has low peroxidase activity where Harper has high.

3. AP 3773 has an emergence score of "2" where Harper has a score of "5". Emergence scores are based primarily on hypocotyl elongation and are calculated using the attached technique.

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
Nickerson American Plant Breeders		AP 3773

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*

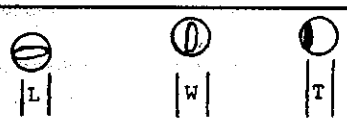
5201 Johnson Drive
Mission, KS 66205

FOR OFFICIAL USE ONLY
PVPO NUMBER
8700109

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:

[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)

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

★ 4. SEED SIZE: (Mature Seed)

[1][7] Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

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

★ 6. COTYLEDON COLOR: (Mature Seed)

[1] 1 = Yellow 2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

[1] 1 = Low 2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

[2] 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)* _____

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11. LEAFLET SIZE:

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

12. LEAF COLOR:

[3] 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:**

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

★ **15. PLANT PUBESCENCE COLOR:**

[2] 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:**

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

★ **18. MATURITY GROUP:**

[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 [ ] 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)*

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

FUNGAL DISEASES: (Continued)

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

[1] Race 8 [1] 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)*

★ [0] Race 1 [0] Race 2 [1] Race 3 [0] Race 4 [0] 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)

★ [2] 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	Pella	Seed Coat Luster	Amsoy 71
Leaf Shape	Harper	Seed Size	Amsoy 71
Leaf Color	A3127	Seed Shape	Harper
Leaf Size	Harper	Seedling Pigmentation	Pella

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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	131	1.9	99	8.1	12.3	36.5	20.8	17	N/D
Harper (Name of Similar Variety)	130	1.5	95	7.3	12.6	N/D	N/D	17	N/D

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.

RECEIVED
USDA AMS
MAR 3 0 1987
Plant Variety
Protection Ofc.

NORTH AMERICAN PLANT BREEDERS INC.
SOYBEAN TRIAL SUMMARY REPORT 1983

OVER-LOCATION MEANS TRIAL #Y2-3003 LOCS: BK, CI, UI

ENTRY NO.	VARIETY OR LINE	MAT.	HT. (in)	LODGE (1-5)	BK YIELD	CI YIELD	UI YIELD	MEAN YIELD	YIELD RANK	SEED QUAL
11	78114-B81-17100	13.4	32.1	2.4	47.2	34.8	49.1	43.7	28	2.3
21	79101-B81-27094	15.7	37.0	2.2	50.0	36.1	48.1	44.7	27	2.0
06	78098-B81-37061	16.2	36.3	2.2	56.7	38.2	61.5	52.1	1	1.9
27	A3127	16.2	30.8	1.6	55.2	37.4	52.9	48.5	11	1.8
08	78108-B81-09096	16.8	29.4	1.7	56.1	34.8	55.2	48.7	10	1.9
09	78110-A81-10152	17.0	35.1	1.8	52.7	43.2	53.0	49.6	7	2.2
18	79101-B81-12139	17.7	34.7	1.7	53.1	36.2	51.4	46.9	19	2.5
28	HP3700	17.7	38.2	2.1	55.4	36.7	51.2	47.7	14	2.2
19	79101-B81-22130	17.8	37.4	1.6	51.9	35.5	50.3	45.9	22	2.2
04	78095-B81-34044	18.0	37.7	2.2	61.0	30.3	55.1	48.8	9	2.0
03	78088-B81-31052	18.1	37.4	1.9	58.9	41.9	54.4	51.7	2	2.3
07	78104-A81-05149	18.1	40.6	1.9	57.5	42.9	50.0	50.1	4	2.3
14	79101-B81-08133	18.2	40.2	2.2	54.4	37.1	51.3	47.6	15	2.1
05	78095-B81-34071	18.7	37.8	1.8	52.9	31.5	53.4	46.0	21	2.3
23	79101-B81-35106	18.8	42.3	2.1	50.6	38.0	48.9	45.8	23	2.0
02	78088-B81-31051	19.0	32.3	1.6	47.2	37.1	52.8	45.7	24	2.1
10	78110-B81-11099	19.2	39.3	1.7	60.8	37.7	52.6	50.4	3	1.8
17	79101-B81-12123	19.6	35.1	2.1	52.4	37.6	48.9	46.3	20	2.3
01	78051-B81-10065	19.8	37.9	2.1	55.8	42.9	50.1	49.6	6	2.4
20	79101-B81-24082	19.8	39.2	1.8	52.2	35.7	53.5	47.1	17	2.2
26	WILLIAMS 82	19.9	38.3	1.9	54.7	40.9	54.7	50.1	5	2.1
16	79101-B81-12121	20.1	39.4	2.4	55.0	39.2	52.6	49.0	8	2.1
25	79101-B81-40082	20.1	39.2	2.4	50.0	36.4	48.7	45.0	26	2.5
13	79101-B81-03138	20.2	38.2	2.1	53.8	38.3	48.7	46.9	18	2.2
12	79101-B81-01118	20.7	43.9	2.4	54.5	36.2	52.8	47.8	12	2.3
15	79101-B81-10142	20.7	42.1	1.7	51.6	39.5	52.3	47.8	13	2.3
22	79101-B81-33091	20.9	38.1	1.8	48.8	40.1	48.1	45.6	25	2.4
24	79101-B81-39082	20.9	39.7	2.4	53.2	38.0	51.0	47.4	16	2.3
	MEAN	18.5	37.5	2.0	53.7	37.7	51.9	47.7		2.2
	C.V.	7.1	7.4	18.4	10.2	7.7	7.8	11.0		14.1
	LSD(.05)	2.2	2.5	.4	8.9NS	4.7	6.6NS	4.7		.4
	NO. OF REPS	9.0	9.0	9.0	3.0	3.0	3.0	9.0		6.0

8700109

NICKERSON AMERICAN PLANT BREEDERS
SOYBEAN TRIAL SUMMARY REPORT 1984

OVER-LOCATION MEANS TRIAL #Y3-3001 LOCS:BK,BL,CI,HA,KM,MC,UI BK,

ENTRY NO.	VARIETY OR LINE	MAT.	HT. (in)	LODGE (1-5)	BK YIELD	BL YIELD	CI YIELD	HA YIELD	KM YIELD	MC YIELD	UI YIELD	MEAN YIELD	YIELD RANK	SEED QUAL
14	AP 250	15.7	30.6	2.0	49.5	48.2	37.9	45.5	20.8	44.4	39.2	35.4	26	2.3
16	HP 3440	16.0	28.8	1.8	46.5	46.7	44.7	45.2	21.6	49.7	32.7	34.6	27	2.4
15	AP 330	17.5	29.3	1.7	42.3	49.3	40.0	60.0	22.3	48.3	40.0	37.5	23	2.4
04	78036-B81-33032	18.1	28.3	1.8	48.0	47.0	43.3	61.9	20.9	45.5	43.1	38.1	22	2.5
01	78038-B81-38024	18.3	29.6	1.6	45.9	52.8	32.7	58.9	21.7	46.8	46.1	38.9	19	2.0
12	A3127	18.8	28.0	1.5	50.2	48.6	38.8	51.9	19.3	44.8	43.9	37.0	24	2.1
05	78098-B81-37061	19.8	30.2	2.4	46.4	47.1	42.9	50.0	22.1	46.1	44.3	36.6	25	2.0
23	1J1901	19.8	28.2	1.8	47.5	44.8	42.1	46.4	19.5	42.4	40.1	34.4	28	2.1
06	78088-B81-31052	20.0	29.1	1.9	49.7	53.6	35.2	65.6	22.7	45.0	46.8	40.5	17	2.2
08	79101-B81-38124	20.0	29.4	1.6	43.7	50.4	49.0	59.7	22.0	48.3	43.2	38.2	21	2.2
20	AGRIPRO 26	20.4	34.1	2.2	42.5	43.4	37.4	56.4	18.7	46.1	39.7	38.8	20	2.2
26	PELLA	21.8	34.8	2.1	48.0	48.7	46.3	51.7	19.7	44.5	42.3	43.0	8	2.2
18	A3659	22.4	27.1	1.2	50.0	48.0	32.4	57.7	23.3	51.5	45.7	39.5	18	2.0
11	1N1059	23.3	31.2	1.8	49.7	50.2	43.0	52.1	21.4	43.7	44.7	43.5	6	2.1
17	HP 3033S	23.8	35.0	2.3	47.4	51.8	41.8	49.4	20.4	43.9	40.5	42.2	13	2.2
19	S30-31	24.0	35.2	2.4	51.6	50.4	43.5	57.5	19.1	45.6	47.3	45.0	4	2.1
28	1N1958	24.3	34.4	2.4	43.9	49.7	41.5	58.4	23.5	40.7	41.4	42.7	10	2.0
25	1W1047	24.7	33.9	2.1	48.9	49.1	38.9	53.0	21.1	46.0	43.4	42.9	9	2.0
02	78015-A81-40012	25.8	33.6	2.0	51.6	50.9	42.7	60.8	19.7	42.0	36.2	43.4	7	1.9
22	1N0433	26.2	35.5	2.3	46.3	50.8	47.8	63.4	24.0	50.0	41.8	46.3	3	2.2
03	78016-B81-19033	26.8	33.8	2.1	47.7	50.9	37.3	47.2	18.2	48.5	45.6	42.2	12	2.6
09	76191-B80-07126	27.2	34.8	2.0	48.4	48.9	37.0	48.8	19.4	49.0	36.7	41.2	15	2.2
07	79101-B81-22117	27.6	32.8	1.9	52.4	54.0	46.7	61.8	21.2	56.0	49.0	48.7	1	1.9
10	76030-B80-21035	29.1	35.7	2.5	39.2	45.3	47.6	56.7	23.1	43.2	39.8	42.1	14	2.3
27	P3981	30.2	34.2	2.2	46.3	49.0	39.6	53.6	23.1	40.3	43.9	42.3	11	2.1
13	WILLIAMS 82	30.6	36.5	2.5	46.1	49.0	43.1	64.0	22.9	45.7	41.7	44.7	5	1.9
21	FAYETTE	30.6	38.5	2.6	45.8	47.4	46.3	57.8	24.2	49.9	53.4	46.4	2	2.1
24	1L0221	30.6	34.6	3.0	47.4	49.8	35.2	41.7	23.8	47.6	39.3	40.7	16	2.2
	MEAN	23.3	32.4	2.0	47.2	49.1	41.2	54.9	21.4	46.3	42.6	41.0		2.2
	C.V.	9.4	9.4	20.2	7.3	5.7	9.0	11.4	9.0	7.6	11.2	11.1		13.1
	LSD(.05)	8.5	6.4	.6	5.6	4.5	6.1	10.2	3.1	5.7	7.7	8.9NS		.3
	NO. OF REPS	12.0	21.0	21.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	21.0		15.0

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NICKERSON AMERICAN PLANT BREEDERS
SOYBEAN TRIAL SUMMARY REPORT 1985

MEF-LOCATION MEANS TRIAL #CV-3001 LOCS. LI, HA, AD, BK, CI, UI, BL

ENTRY NO.	VARIETY OR LINE	MAT.	HT. (in)	LODGE (1-5)	LI YIELD	HA YIELD	AD YIELD	BK YIELD	CI YIELD	UI YIELD	BL YIELD	MEAN YIELD	YIELD RANK	SEED QUAL
08	78015-B81-18024	20.9	33.5	1.4	41.6	45.2	55.6	64.2	53.5	59.1	53.4	53.3	15	1.9
23	HS 265	22.1	32.1	1.3	30.3	32.9	52.8	55.1	51.3	57.7	52.2	47.5	28	2.2
07	79101-B81-36081	22.3	36.2	1.7	39.3	51.9	53.3	62.2	54.0	52.0	54.8	52.5	22	2.1
10	76262-A80-39075	22.3	39.6	2.0	49.7	43.5	53.5	59.2	59.3	56.9	54.5	53.8	13	2.2
12	77054-A80-21268	22.4	35.8	1.8	40.9	41.1	58.2	63.4	51.8	53.3	52.3	51.6	26	2.3
24	STINE 2050	22.6	34.8	1.9	41.6	41.9	56.7	63.8	52.0	53.9	56.4	52.3	24	2.3
17	PELLA	22.3	39.7	1.7	41.8	46.9	56.8	67.2	52.6	53.0	51.6	52.9	18	2.2
11	AP 3023	23.9	37.8	2.3	44.2	46.9	54.0	66.9	54.4	56.9	51.4	53.5	14	2.2
14	HP 30335	24.4	36.4	1.8	42.6	41.2	59.4	70.0	58.1	56.6	55.9	54.8	7	2.2
02	78038-B81-38024	26.4	38.4	1.9	42.9	50.4	50.6	65.8	52.0	53.1	53.2	52.6	20	2.2
01	78036-B81-33032	26.8	36.7	2.6	39.7	46.4	54.6	61.3	58.9	53.3	51.5	52.3	23	2.4
15	HP 3440	27.0	39.4	2.0	41.2	48.8	59.7	68.5	55.9	48.2	54.7	53.9	12	2.7
13	77063-B80-22216	27.1	40.5	2.9	43.2	44.0	54.9	64.2	49.7	56.6	53.0	52.2	25	2.2
25	HARPER	27.2	35.3	1.6	45.9	46.7	53.6	66.5	58.7	62.1	57.8	55.9	4	2.0
25	S30-31	27.5	39.2	2.6	44.0	47.4	55.9	59.0	53.6	53.7	56.7	52.9	19	2.1
19	A3127	27.9	36.3	1.6	44.3	47.9	59.4	73.1	62.0	57.1	51.7	56.5	1	1.9
16	HP 3700	30.4	39.9	2.2	43.9	40.1	52.1	61.6	55.2	53.8	50.4	51.0	27	2.0
03	78088-B81-31052	30.6	38.1	2.3	45.3	40.4	59.1	74.5	56.9	52.5	53.9	54.7	8	1.9
09	79101-B81-05142	30.7	39.4	2.8	43.5	50.1	54.6	63.4	57.9	50.3	51.0	53.0	17	2.0
04	78098-B81-37061	30.9	39.7	3.1	42.4	48.2	51.4	68.3	52.2	53.3	52.2	52.6	21	2.0
27	IN 0433	31.8	40.2	2.3	43.0	56.3	57.3	68.5	57.6	53.9	53.4	55.7	5	2.5
18	WILLIAMS 82	32.0	41.4	2.2	46.8	56.1	56.4	65.1	57.4	50.1	50.4	54.6	9	2.0
20	A3420	32.1	41.2	2.5	47.3	47.6	58.9	68.5	58.4	52.8	51.3	55.0	6	1.8
28	79101-B81-01121	32.3	37.1	1.5	44.8	51.2	53.8	63.8	60.6	61.1	56.5	56.0	3	2.0
22	P3981	33.1	40.0	2.1	46.3	43.5	57.7	70.4	53.5	51.2	48.8	53.1	16	2.0
06	79101-B81-22117	33.3	38.1	1.6	46.0	41.9	60.2	70.7	59.0	59.0	55.0	56.0	2	2.0
05	79101-B81-38124	33.6	40.7	1.8	46.7	51.2	55.4	65.5	55.6	52.2	53.0	54.2	10	2.4
21	A3966	35.1	43.4	2.5	43.4	47.0	54.9	69.2	60.8	53.5	49.1	54.0	11	1.9
	MEAN	27.9	38.2	2.1	43.3	46.3	55.7	65.7	55.8	54.5	53.1	53.5		2.1
	C.V.	6.3	6.9	17.1	9.6	11.3	5.3	7.5	4.2	6.2	8.0	8.1		9.8
	LSD(.05)	2.0	2.1	.4	6.7	8.5	4.8	8.0	3.8	5.5	6.9NS	3.5		.2
	NO. OF REPS	15.0	21.0	21.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	21.0		15.0

ENTRY NO.	VARIETY	MAT	HT	LODGE	YIELD BL	BK	CR	HA	OI	MT	UI	WI	MEAN	RANK	% CHECK
14	79025-A82-26102	16.4	33.0	2.6	63.0	50.8	54.4	12.2	54.3	44.3	50.9	56.4	48.3	28	84
17	AP 3023	16.9	36.8	2.8	61.1	50.8	47.1	36.7	46.7	56.4	44.6	63.3	50.8	22	89
10	AP 3132	17.3	36.3	2.4	51.5	50.2	56.1	36.4	56.1	56.1	36.2	58.3	50.1	23	87
18	HP 3033S	17.6	35.1	2.7	54.5	49.4	58.2	32.2	49.5	51.0	43.7	59.5	49.8	24	87
25	STINE2050	19.2	34.5	2.6	58.2	53.4	49.2	16.8	49.9	52.7	48.0	68.0	49.5	26	86
23	A2943	19.6	35.9	1.9	64.6	55.2	64.5	41.8	50.6	59.1	46.5	66.4	56.1	4	98
9	78015-B82-34268	19.7	33.4	1.8	60.0	53.4	58.1	32.6	46.9	55.1	47.7	56.9	51.3	19	90
22	PELLA	19.9	40.5	2.3	51.0	55.1	61.6	43.7	50.2	48.9	45.8	65.0	52.7	12	92
19	HP 3440	20.1	38.8	2.5	56.7	52.0	63.0	19.5	48.7	51.2	38.3	66.3	49.5	25	86
27	S30-31	21.2	38.2	2.7	54.6	52.3	55.6	36.7	56.1	57.2	42.9	60.9	52.0	17	91
7	79120-B82-12174	21.7	38.7	2.4	54.2	53.6	63.2	37.1	47.8	47.1	43.1	60.0	50.8	21	89
8	79116-A82-23151	22.8	40.4	2.2	54.5	56.7	62.1	45.4	52.0	52.4	36.8	61.9	52.7	11	92
5	79156-B82-29268	23.2	33.0	1.9	60.2	53.2	52.0	37.9	52.8	52.6	42.8	58.0	51.2	20	89
21	HARPER	23.8	35.4	2.0	57.8	58.0	56.1	42.6	52.3	51.2	44.7	56.3	52.4	15	91
11	AP 3773	24.8	38.4	2.4	62.9	55.9	59.7	55.5	50.9	55.2	38.1	62.0	55.0	6	96
4	79176-M82-849	25.7	40.8	2.2	52.4	53.4	57.8	51.3	52.1	53.3	40.0	58.7	52.4	13	91
2	79176-B82-23265	26.2	41.1	2.4	58.2	55.4	65.6	58.6	53.0	51.8	45.3	63.8	56.5	3	99
20	HP 3700	26.3	39.5	2.7	47.3	58.6	62.3	49.4	51.4	46.6	31.8	66.8	51.8	18	90
24	A3127	26.3	36.0	2.3	60.1	56.9	54.0	55.6	59.5	59.9	44.2	65.9	57.0	2	100
6	79052-A82-16251	26.4	35.4	2.2	62.2	55.2	56.1	35.1	52.8	58.8	47.6	58.8	53.3	9	93
1	79027-B82-29058	26.9	41.7	2.6	58.6	60.1	66.3	62.3	51.6	51.3	44.6	63.3	57.3	1	100
3	79116-B82-38141	27.7	35.9	1.9	53.3	51.5	50.9	50.0	46.0	52.4	33.4	50.7	48.5	27	85
12	EX 3977	27.7	38.0	2.3	58.9	60.3	62.5	55.1	51.7	53.6	39.8	63.7	55.7	5	97
28	P3981	27.9	39.6	2.4	54.8	57.5	68.6	49.6	53.2	49.7	45.3	61.2	55.0	7	96
13	EX 3988	28.9	37.3	2.2	58.7	58.4	58.5	34.8	52.0	50.3	40.4	66.4	52.4	14	91
15	WMS 82	29.3	42.2	2.6	57.4	52.9	58.8	59.3	47.5	51.2	37.8	59.9	53.1	10	93
26	S3999	30.4	37.4	2.4	54.9	53.3	57.6	43.1	48.5	54.8	42.2	61.4	52.0	16	91
16	A3427	31.3	40.9	2.6	57.7	57.3	57.3	52.3	49.8	50.1	42.1	63.3	53.7	8	94
	MEAN	23.8	37.6	2.3	57.1	54.7	58.5	42.3	51.2	52.6	42.3	61.5	52.5		92
	C.V.	8.0	8.0	34.5	7.8	4.4	7.6	24.4	6.1	7.9	10.9	7.9	9.6		
	NO. OF REPS	18.0	24.0	24.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	24.0		

LOCATIONS: BL - BLOOMINGTON, IL; BK - BROOKSTON, IN; CR - CRAWFORDSVILLE, IN; HA - HAVILAND, OH; OI - OSKALOOSA, IA; MT - MONTICELLO, IL; UI - URBANA, IL; WI - WASHINGTON, IA

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EMERGENCE TEST
(Iowa State)

Purpose: to determine a percentage of emergence on experimental lines in relation to their germination

Materials:
1. styrofoam or plastic cups (5" x 3")
2. sand
3. water

Procedure:
1. Count out 4 lots of 25 seeds each of each experimental line.
2. Place 1" of moistened sand in the bottom of each cup.
3. Equally space each lot of 25 seeds on the sand in each corresponding cup.
4. Fill cups with sand so that the level is even with the top of the cup. DO NOT PACK DOWN.
5. Place in a controlled atmosphere (77°F) for 13 days.

6a. After the waiting period, count the number of fully emerged plants such that the cotyledons have fully passed through the soil surface.

6b. After counting fully emerged plants, dig down to the 1 inch level and count the number of germinated seeds, including those that were counted as emerged.

7. Compare those emerged plants in relation to those germinated in a ratio for all 4 replications.
8. Calculate a % emergence based on the ratio for all 4 replications and score in the following manner:

1 = 99%-80% emergence
2 = 79%-60% emergence
3 = 59%-40% emergence
4 = 39%-20% emergence
5 = 19%- 0% emergence

"EXHIBIT E"

Nickerson American Plant Breeders, through various changes in corporate structure and purchases, are sole owners of the assets of the previous companies North American Plant Breeders and AgriPro, Inc. The ownership comprises all the soybean genetic material, including the variety AP 3773.

Wayne R. Ellingson
Signature

Wayne R. Ellingson

Director of Soybean Research