No. 9700318

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Syngenta Seeds, Inc.

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, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN CING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY TION ACT. (84 STAT. 1542, AS AMENDED; 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S24-12'

In Testimony Thereof, 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 twentieth day of September, in the year two thousand two.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.*

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

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)*
(BT: 4/11/02) Syngenta ~~Novartis~~ Seeds, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
X9527

3. VARIETY NAME
S24-12

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

5. TELEPHONE *(include area code)*
612-593-7333

6. FAX *(include area code)*
612-593-7801

FOR OFFICIAL USE ONLY

PVPO NUMBER 9700318

FILING DATE 05/27/97

FEES RECEIVED
FILING AND EXAMINATION FEE: $ 2,450.00 DATE 5-27-97
CERTIFICATION FEE: $ 320.00 DATE 6/03/02

7. GENUS AND SPECIES NAME
Glycine max

8. FAMILY NAME *(Botanical)*
Leguminosae

9. CROP KIND NAME *(Common name)*
Soybean

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
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
John C. Thorne
(BT: 4/11/02) Syngenta ~~Novartis~~ Seeds, Inc.
P.O. Box 949
Washington, Iowa 52353

14. TELEPHONE *(include area code)*
319-653-2181

15. FAX *(include area code)*
319-653-4609

16. 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. Statement of Distinctness
c. [X] Exhibit C. Objective Description of the Variety
d. [ ] Exhibit D. Additional Description of the Variety *(Optional)*
e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT 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 18 and 19 below)* [X] NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[ ] YES [X] NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
[ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[X] YES *(If "yes," give names of countries and dates)* [ ] NO
Canada, 1995

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, 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))*	SIGNATURE OF APPLICANT *(Owner(s))*
NAME *(Please print or type)* John C. Thorne	NAME *(Please print or type)*
CAPACITY OR TITLE: Director, Soybean Breeding — DATE: 5-20-97	CAPACITY OR TITLE — DATE

EXHIBIT A

Origin and Breeding History of the Variety

The soybean variety S 24-12 is derived from a single F6 plant from the cross of an experimental line designated W214981 x S 29-20. W214981 was derived from the cross B152 x experimental line 614984, selected from Cutler 71 x Essex. The cross was made in the summer of 1987 at the Novartis (formerly Northrup King) Research Center at Washington, Iowa. The F1 and F2 generations were grown at the Novaris (formerly Northrup King) Research Center at Waimea, Kauai, Hawaii, in the winter of 1987-88; the F3 at Washington in the summer of 1988; the F4 and F5 at Waimea in the winter of 1988-89, and the F6 at Washington in the summer of 1989. The F1 was bulk harvested. The F2 through F5 were advanced by harvesting 2-4 seeds per plant and planting 600 seed from the resulting bulk. In the fall of 1989, 100 plants were harvested and threshed individually. The seed from each of these plants were planted in a progeny row at Washington in 1990. One of these, numbered W004868, was selected based on yield and agronomic characteristics for further testing. This line was subsequently tested under the temporary designation X9527 and named S 24-12. It has been tested at several northern and central cornbelt locations in the U.S. and in southern Ontario from 1991 through 1996 and found to yield well compared to other mid Group 2 varieties. Descriptive characteristics including purple flowers, gray pubescence, brown pods, and yellow hilum (may contain 2% other hilum color) have been identified and confirmed. S 24-12 has been tested in the field for iron deficiency chlorosis and found to have an intermediate reaction. Field tests have also shown it to have moderate resistance to brown stem rot and Sclerotinia white mold. It has been tested for reaction to Races 1, 3, 4, 7, and 17 of Phytophthora sojae using hypocotyl inoculation of greenhouse grown plants and found to carry the Rps1-c gene for resistance.

In the summer of 1994, research personnel at the Novartis (formerly Northrup King) Research Center at Arva, Ontario, Canada, grew a small increase of S 24-12 from carefully rogued seed. This increase block was rogued carefully at flowering and maturity, and all plants not conforming to the variety description were removed. The seed harvested from this increase was planted in the winter of 1995 in Puerto Rico to produce Breeder Seed.

Foundation Seed of S 24-12 was produced in Ontario in 1995 from the Puerto Rico Breeder Seed. Canadian seed officials inspected the fields and found them to meet the standards for Foundation Seed. S 24-12 is stable and uniform. Over six years of testing and three cycles of seed increase, we have observed no variants. Any off-type plants removed from increase fields were assumed to have arisen from admixture or outcrossing. Varietal purity will be maintained using progeny rows as described previously.

EXHIBIT B

Novelty Statement for the Variety

S 24-12 is most similar to S 23-12. It can be differentiated from S 23-12 on the basis of reaction to Phytophthora megasperma, Race 3. S 24-12 is resistant to Race 3 of Phytophthora; S23-12 is susceptible.

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
(BT:4/11/02) Syngenta ~~Novartis~~ Seeds, Inc.		S24-12

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

P.O. Box 959
Minneapolis, MN 55440

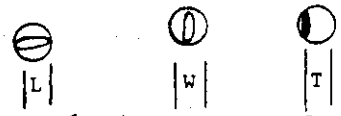
FOR OFFICIAL USE ONLY

PVPO NUMBER 9700318

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][8] Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

May contain up to 2 % other hilum color.

[2] 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:

[2] 1 = Low 2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

[ ] 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)* _____

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:

[2] 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:

[5] 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)*
- [ ] 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 [ ] Other *(Specify)* _____
- [ ] Target Spot *(Corynespora cassiicola)*
- [ ] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*
- [ ] Powdery Mildew *(Microsphaera diffusa)*
- [ ] Brown Stem Rot *(Cephalosporium gregatum)* Moderately Resistant.
- [ ] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

5

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

FUNGAL DISEASES: (Continued)

- [ ] Pod and Stem Blight *(Diaporthe phaseolorum var; sojae)*
- [ ] 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 [1] Race 3 [ ] Race 4 [ ] Other *(Specify)* _____

- [ ] 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)

- [ ] Iron Chlorosis on Calcareous Soil Intermediate
- [ ] 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	S20-91	Seed Coat Luster	S20-91
Leaf Shape	Pioneer 9273	Seed Size	S20-91
Leaf Color	S23-12	Seed Shape	S23-12
Leaf Size	Pioneer 9273	Seedling Pigmentation	S23-12

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	129	2.9	77	5	10	42.1	21.4	17.7	
S20-91 Name of Similar Variety	127	2.3	76	6	10	43.1	21.2	19.1	

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.

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055 EXPIRES: 12-31-96

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

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1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Syngenta ~~Novartis~~ Seeds, Inc. (BT: 4/11/02)		S24-12
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
P.O. Box 959 Minneapolis, MN 55440	612-593-7333	612-593-7801
	7. PVPO NUMBER	9700318

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country _____

10. Is the applicant the original breeder? If no, please answer the following: [X] YES [ ] NO

a. If original rights to variety were owned by individual(s):
Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country _____ [ ] YES [ ] NO

b. If original rights to variety were owned by a company:
Is the original breeder(s) U.S. based company? If no, give name of country _____

11. Additional explantion on ownership *(If needed, use reverse for extra space):*

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.