No. 7400062

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Mississippi Agricultural and Forestry Experiment Station

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, OR 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. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

* [Waived]

SOYBEAN

'Tracy'

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

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* twelfth *day of* December *in the year of our Lord one thousand nine hundred and* seventy-five

Attest:

S. 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: Tracy	2. KIND NAME: Common	FOR OFFICIAL USE ONLY PVPO NUMBER: 7400062
3. GENUS AND SPECIES NAME: *Glycine max*	4. FAMILY NAME *(Botanical)*: Leguminoseae 5. DATE OF DETERMINATION:	FILING DATE: 2-7-74 TIME: 3:00 P.M. FEE RECEIVED: $ 750 CHARGES:
6. NAME OF APPLICANT(S): Mississippi Agricultural and Forestry Experiment Station (MAFES)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: Drawer ES Mississippi State, MS 39762	8. TELEPHONE AREA CODE AND NUMBER: 1-601-325-4105
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*: State experiment station	10. STATE OF INCORPORATION: Mississippi	11. DATE OF INCORPORATION:

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

Foundation Seed Stocks
Box 5267
Mississippi State, MS 39762

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

[X] 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

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 (3)
Foundation, Registered, and Certified

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).

(DATE) _____ (SIGNATURE OF APPLICANT) James H Anderson
Director, Miss. Agri and Forestry Expt Sta. 1-23-74

(DATE) _____ (SIGNATURE OF APPLICANT) _____

7400062

EXHIBIT A

Origin and Breeding History of Tracy Soybean

1963 Cross made between the two breeding lines, D61-618 and D60-9647.

1963-64 (winter) F_1 plants grown in greenhouse at Stoneville.

1964 F_2 population grown in field at Stoneville.

1964-65 (winter) Ten seed planted from each F_2 plant in greenhouse and inoculated with race 2 of phytophthora rot.[2] Both parents were resistant to race 1 but differed in reaction to race 2. Susceptible F_2 plants discarded.

1965 F_3 lines grown in field on Sharkey clay in a continuous soybean cropping system. Single plant selections made from selected lines on basis of agronomic and disease reaction qualities.

1966 F_4 lines grown as above.

1967 F_5 lines grown as above. D67-4601 was one of the lines harvested for evaluation in replicated trials.

1968 Evaluated in replicated yield trials on two soil types at Stoneville. Performance justified advancing to preliminary regional trials.

1969 Grown in preliminary regional trials at 8 locations across South. Performance justified advance to southwide uniformity trials. Preliminary screening indicated a higher tolerance to 2,4-DB.

1970-72 Grown in regional uniformity trials at 32 locations across South. Further evaluations made for tolerance to the herbicide 2,4-DB.

1971 Decision made that strain might merit release as a variety. Five hundred single plant progenies grown to initiate production of pure seed. Approximately 500 pounds seed produced.

1972 Increase field grown in Mississippi and North Carolina.

1973 Seed increased in Mississippi, North Carolina, Alabama, Tennessee, Arkansas and Louisiana. Name Tracy announced November 1.

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EXHIBIT A - ADDENDUM

Origin and Breeding History of Tracy Soybean

1. Tracy originated in Mississippi from a hand-pollinated cross between two true breeding lines--D61-618 and D60-9647. The cross was made in 1963. Breeding history is published in Mississippi Agricultural and Forestry publication for December 1973 (Information sheet 1227 attached).

2. Pure line selections were made in the F_5 generations based upon uniformity for flowering, maturity, height, flower color, pubescence color, hilum color, reaction to bacterial pustule, and phytophthora rot. Yield tests were conducted first on two soil types at Stoneville and later in regional tests conducted at 30-35 locations across the South. Screening for tolerance to 2,4-DB was done at Stoneville.

3. Like all other yellow-seeded varieties having colored hila, mutations may occur giving all-colored seed. Tracy has black hila and mutant types will be black. No estimated frequency can be given for this character. Single plant progenies will be grown at regular intervals to provide breeder seed free of black mutants.

4. The F_5 line D67-4601 was grown in 1967. The strain was uniform at that time and has appeared homogenous in subsequent plantings.

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EXHIBIT B

Botanical Description of Tracy Soybean

Tracy is of Group VI maturity, approximately 3 days earlier in maturity than Lee 68. When planted from May 10 to 25 at Stoneville, Mississippi, it will mature about October 13. Tracy has a determinate growth type, white flowers, and brown pubescence. Seed is shiny, yellow with black hila. Plant type is distinctive, differing from other commonly grown varieties in having darker green, more dense foliage.

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)
Miss. Agricultural & Forestry Experiment Station (MAFES)

ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code)*
Foundation Seed Stocks
Box 5267
Miss. State, MS 39762

FOR OFFICIAL USE ONLY
PVPO NUMBER
7400062
VARIETY NAME OR TEMPORARY DESIGNATION
Tracy

Place the appropriate number that describes the varietal character of this variety in the boxes below.

1. SEED SHAPE:
[4] 1 = SPHERICAL 2 = SPHERICAL FLATTENED 3 = ELONGATE 4 = OTHER *(Specify)* Spherical, slightly elongated

2. SEED COAT COLOR:
[1] 1 = YELLOW 2 = GREEN 3 = BROWN 4 = BLACK 5 = OTHER *(Specify)*
SHADE: [ ] 1 = LIGHT 2 = MEDIUM 3 = DARK

3. SEED COAT LUSTER:
[2] 1 = DULL 2 = SHINY

4. SEED SIZE
[1][6] GRAMS PER 100 SEEDS

5. HILUM COLOR:
[6] 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)*:
[3] 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)*:
[3] 1 = LIGHT GREEN 2 = MEDIUM GREEN 3 = DARK GREEN

10. FLOWER COLOR:
[1] 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:
[2] 1 = GRAY 2 = BROWN 3 = OTHER *(Specify)*
SHADE: [2] 1 = LIGHT 2 = MEDIUM 3 = DARK

14. PLANT TYPES *(See Reverse)*:
[2] 1 = SLENDER 2 = BUSHY 3 = INTERMEDIATE

15. PLANT HABIT:
[1] 1 = DETERMINATE 2 = INDETERMINATE 3 = OTHER *(Specify)*

16. HYPOCOTYL COLOR:
[1] 1 = GREEN 2 = PURPLE

17. SEED PROTEIN:
[ ] 1 = A 2 = B NA

18. NUMBER OF DAYS TO FLOWERING *(Place a zero in first box (e.g. [0][9]) when days are 9 or less.)*
[6][0]

19. MATURITY GROUP:
[8] 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)*

[2] BACTERIAL PUSTULE	[1] SOYBEAN CYST	[1] DOWNY MILDEW	[2] PURPLE STAIN	[0] POD AND STEM BLIGHT	[1] ROOT KNOT
[2] FROGEYE	[0] STEM CANKER	[2] PHYTO-PHTHORA	[0] BROWN STEM ROT	[2] TARGET SPOT	[0] BROWN SPOT
[0] BUD BLIGHT	[2] WILDFIRE	[2] RHIZOCTONIA ROT	[ ] OTHER *(Specify)*		

7400062

REVISED RJS

EXHIBIT D

Data Indicative of Novelty

Tracy is a highly productive variety somewhat higher in protein content and more tolerant to the herbicide 2,4-DB than the variety Lee 68 presently in production. It is resistant to the foliar diseases, bacterial pustule, wildfire, and target spot. Presently 4 races of phytophthora rot have been identified in the United States. Preliminary data indicates that Tracy is the only commercial variety resistant to all 4 races. Seed yield has averaged 6 percent higher than that for Lee 68.

	2,4-DB Tolerance		*Protein Content (percent)	*Oil Content (percent)	Phytophthora Rot Races			
	Standard Rate	Double Rate			1	2	3	4
Tracy	39.5	36.2	43.3	20.3	R	R	R	R
Lee 68	28.8	22.7	41.3	21.8	R	R	R	S
Pickett 71	35.3	26.8	40.4	22.3	R	R	R	S
Bragg	28.3	26.4						

*3-year regional average

7400062

EXHIBIT E

Statement of Applicant's Ownership

The breeder, Edgar E. Hartwig, is a Research Agronomist, Agriculture Research Service, United States Department of Agriculture, working in cooperation with Delta Branch Station, Mississippi Agricultural and Forestry Experiment Station, Stoneville, Mississippi. The research which led to the development of the soybean variety, Tracy, was conducted by the breeder as described above under an authorized project within the research framework of the organization described above. The objective of the research program was the development of a high producing soybean variety with 2,4-DB tolerance.

7/18/74

7400062
EXHIBIT E RJS

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
WASHINGTON, D.C. 20250

JUL 15 1974

Director James H. Anderson
Agricultural and Forestry Experiment Station
Mississippi State University
P.O. Drawer ES
Mississippi State, Mississippi 39762

Dear Dr. Anderson:

Inasmuch as your request of June 20 to Dr. H. O. Graumann for a letter of consent regarding plant variety protection issues reflects on and could set the stage for final policy on jointly developed varieties, it has been determined appropriate for the response to be from the Administrator's office.

Our Department legal staff advises us that USDA policy as to protection of such varieties is expressed in the "inventions" clause in our Cooperative Agreement with the University (see General Provisions, paragraph 17b).

The policy is sufficiently flexible to allow the University to be listed as a sole or joint owner of each Certificate. However, just as you have pointed out, it will be necessary for the University to waive its rights as provided in Chapter 8, Section 83(a) of the Plant Variety Protection Act. To accomplish this, the Department would require that the University request the Plant Variety Protection Office to print such a waiver on each Certificate, and it should be worded as follows:

> "The right to exclude others from selling, offering for sale, reproducing, importing, or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is <u>hereby waived</u>."

Furthermore, if the University elects sole ownership of the Certificates, they must also request the Plant Variety Protection Office to include a printed notice on each Certificate that the variety was developed under joint Department-University funding.

With the understanding that the above stated conditions are agreeable to you and can be met, we give our consent for the University to move ahead in clarifying "Statement of Ownership" in Exhibit E of application Nos. 73058 and 7400062 now pending in the Plant Variety Protection Office.

Sincerely,

Ralph J. McCracken

Ralph J. McCracken
Acting Administrator

7400062

REVISED RJS

EXHIBIT D

Data Indicative of Novelty

Tracy is a highly productive variety somewhat higher in protein content and more tolerant to the herbicide 2,4-DB than the variety Lee 68 presently in production. It is resistant to the foliar diseases, bacterial pustule, wildfire, and target spot. Presently 4 races of phytophthora rot have been identified in the United States. Preliminary data indicates that Tracy is the only commercial variety resistant to all 4 races. Seed yield has averaged 6 percent higher than that for Lee 68.

	2,4-DB Tolerance		*Protein Content (percent)	*Oil Content (percent)	Phytophthora Rot Races			
	Standard Rate	Double Rate			1	2	3	4
Tracy	39.5	36.2	43.3	20.3	R	R	R	R
Lee 68	28.8	22.7	41.3	21.8	R	R	R	S
Pickett 71	35.3	26.8	40.4	22.3	R	R	R	S
Bragg	28.3	26.4						

*3-year regional average

PV# 7400062

Copy

REVISED RJS

EXHIBIT D

Data Indicative of Novelty

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	Standard Rate	Double Rate			1	2	3	4
Tracy	39.5	36.2	43.3	20.3	R	R	R	R
Lee 68	28.8	22.7	41.3	21.8	R	R	R	S
Pickett 71	35.3	26.8	40.4	22.3	R	R	R	S
Bragg	28.3	26.4						

*3-year regional average

The variety Lee 68 as described above and on Exhibit C, item #23, most closely resembles the variety Tracy with the exceptions as noted.

MR. LEESE
7400062

MISSISSIPPI STATE UNIVERSITY
MAFES
Mississippi Agricultural &
Forestry Experiment Station—

Foundation Seed Stocks
Bob Munson, Manager
P. O. Box 5267
Mississippi State, Mississippi 39762
Phone (601) 325-4105

Waiver

12 September 1974

Mr. S. F. Rollin, Commissioner
Plant Variety Protection Office
Grain Division
6525 Belcrest Road
Hyattsville, Maryland 20782

Dear Mr. Rollin:

As an addendum to my letter of yesterday in which we sent a check for the Certificates on Tracy (Ap. no. 7400062) and Forrest (Ap. no. 73058) Soybeans, please note that we wish to have the following waiver printed on the Certificates:

"The right to exclude others from selling, offering for sale, reproducing, importing, or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is hereby waived."

Furthermore, the University wishes to have printed on the Certificates that the varieties were developed under joint USDA-Mississippi State University funding.

Thank you for taking care of this matter.

Sincerely yours,

Bob Munson

Bob Munson
Research Associate & Manager
FOUNDATION SEED STOCKS

BM:bjc

RECEIVED
SEP 17 1974
U.S. DEPARTMENT OF AGRICULTURE
AMS, GRAIN DIV.
PVPO

7400062

FORM GR-470-2 (REVERSE)

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant shape		Petiole angle	
Leaf shape		Seed size	
Leaf color		Seed shape	
Leaf surface		Seedling pigmentation	

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY:

VARIETY	~~NO. OF DAYS TO~~ Date of MATURITY	LODGING SCORE	PLANT HEIGHT	LEAF SIZE		CONTENT		AVERAGE NO. OF PODS PER PLANT	IODINE NO.
				Width	Length	Protein	Oil		
Submitted	Oct. 13	2.7	38	-	-	43.3	20.8%	-	-
Name of similar variety Lee 68	Oct. 16	3.0	34	-	-	41.3	21.8	-	-

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"

FORM GR-470 (REVERSE)

RECEIVED FEB 2 1974 U.S. DEPARTMENT OF AGRICULTURE AMS, GRAIN DIV. PVPO

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and ~~$50.00~~ 250.00 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.