No. 7300017

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Farmers Forage Research Cooperative

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 (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'FFR 666'

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* 25th *day of* April *in the year of our Lord one thousand nine hundred and* seventy-four

Attest:

S. G. 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 FFR666	2. KIND NAME Soybean	FOR OFFICIAL USE ONLY PVPO NUMBER 73017
3. GENUS AND SPECIES NAME Glycine Max	4. FAMILY NAME *(Botanical)* Leguminoseae	FILING DATE 10/26/72 — TIME 3:30 P.M.
	5. DATE OF DETERMINATION November 11, 1970	FEE RECEIVED $ 50 — CHARGES
6. NAME OF APPLICANT(S) Farmers Forage Research Coop.	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* 4112 East State Road 225 West Lafayette, Indiana 47906	8. TELEPHONE AREA CODE AND NUMBER 317+ 567-2700

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Cooperative	10. STATE OF INCORPORATION Wisconsin	11. DATE OF INCORPORATION 1961

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

G. Robert Taylor, Soybean Breeder
Farmers Forage Research Cooperative
4112 East State Road 225
West Lafayette, Indiana 47906

Robert J. Buker, Executive Vice President & General Manager
Farmers Forage Research Cooperative
4112 East State Road 225
West Lafayette, Indiana 47906

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.)* [ ] YES [X] NO PER PHONE CALL 4/26/73 R.J.S.

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? 3

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).

October 24, 1972 (DATE) — G Robert Taylor (SIGNATURE OF APPLICANT)

October 24, 1972 (DATE) — RJ Buker (SIGNATURE OF APPLICANT)

FORM GR-470
(2-12-71)

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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.)* [ ] YES [X] NO PER PHONE CAH 4/26/73 R.J.S.

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? 3

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).

October 24, 1972 (DATE) — G Robert Taylor (SIGNATURE OF APPLICANT)

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#73017

12A Exhibit A:

FFR666 was selected as a single, late-maturing plant of the variety, Dyer. The plant was observed to be strikingly different than the remainder of the plants in an herbicide trial at Jackson, Tennessee. Seed from this plant was increased in the greenhouse in the 1968-69 season and checked for distinctiveness in a field test at Jackson in 1969. This line was entered as 94103 in yield tests at three locations in 1970 and 1971. It was entered in university tests at two locations in 1971 and eight locations in 1972. No identifiable variants have been found during multiplication of this variety. No changes in morphology, seed quality, etc. from the original plant have been observed.

#73017

Revised Exhibit B:

The general appearance of FFR666 resembles that of the variety Dyer. Seed characteristics resemble those of the variety Dyer in that both varieties have purple flowers, tawny pubescence, tan pods, and yellow seed coats with black hila on slightly enlongated seeds.

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)
FARMERS FORAGE RESEARCH COOPERATIVE

ADDRESS *(Street and No., or R.F.D. No.; City, State, and ZIP Code)*
G. Robert Taylor, Soybean Breeder
4112 east State Road 225
West Lafayette, Indiana 47906

FOR OFFICIAL USE ONLY
PVPO NUMBER: 73017
VARIETY NAME OR TEMPORARY DESIGNATION: FFR666

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

1. SEED SHAPE: [2] 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: [1] 1 = DULL 2 = SHINY

4. SEED SIZE [14.7] 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: [2] 1 = YELLOW 2 = GREEN

7. LEAFLET SIZE *(See Reverse)*: [2] 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: [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: [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.)* [59]

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)*

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

4 of 7

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

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

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	145	2.0	45			42.3	21.6%	55	
Name of similar variety	Hill	Hill	Hill			Beeson	Beeson	Hood	

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"

73017

Farmers Forage Research

FARMERS FORAGE RESEARCH COOPERATIVE

4112 East State Road 225 West Lafayette, Indiana 47906 Tel. 317-567-2700

December 13, 1973

Robert J. Snyder, Examiner
Plant Variety Protection Office
U.S.D.A.- A.R.S.
6525 Belcrest Road
Hyattsville, Maryland 20782

Dear Mr. Snyder: REVISED EXHIBIT D

Subject: Application No. 73017; Soybean FFR666

FFR666 has a unique combination of characteristics unlike that of other soybean varieties.

Plant & Seed Characteristics:

The general appearance and seed characteristics of the variety resemble those of the variety Dyer; however, FFR666 is 12" shorter than Dyer which makes it more closely resemble the variety Hill in the height characteristic since Hill is 6" shorter than Dyer. I used Hill in this comparison because the instructions indicated that the variety most like the novel variety should be used. In other characteristics (flower color, pubescence color, pod color and hilum color), FFR666 most closely resembles Dyer as originally stated.

Maturity:

FFR666 matures 14 to 16 days later than Dyer (if we use Dyer for this comparison); however to be consistent with the earlier comparison of height, which is closely associated with maturity, the comparison showed FFR666 to be as much as 24 days later than Hill. This comparison is documented in the data given in Table I.

Disease Resistance:

When nematode tests were conducted on this variety, it was shown to be susceptible to cyst nematodes and root knot nematodes. The cyst nematode and root knot nematode tests were run in different states. If we are comparing FFR666 to Dyer, the nematode tests indicate FFR666 is different that Dyer; whereas, if this comparison is made with Hill, then FFR666 resembles Hill in that they are both susceptible to nematodes. Again, the comparison was made with varieties previously used to indicate which variety FFR666 most nearly resembles as per instructions enclosed with the application form GR-470.

continued.....

Yield Data:

Yield data in table 1 indicates FFR666 is decidedly different in yield than Hill at the TFC location in 1970 (FFR666 yielded 44.8 bu/acre - Hill yielded 25.7 bu/acre). The TFC 1971 data indicates FFR666 is decidedly different than Dyer for yield (FFR666 yielded 58.5 bu/acre - Dyer yielded 39.3 bu/acre).

To summarize data previously submitted that indicates novelty of FFR666 when compared to the two varieties it most closely resembles: FFR666 is like Dyer in seed color, hilum color, pubescence color, pod color, and flower color. It is unlike Dyer in height, maturity, yield and reaction to cyst and root knot nematodes. FFR666 is like Hill in plant shape, leaf shape and branching (though FFR666 has more branching than Hill, it resembles Hill more than other varieties for this trait), and in reaction to cyst nematodes and root knot nematodes. FFR666 is unlike either variety in Maturity, height, and yield. This combination of maturity, height, and yield plus disease reaction surely indicates novelty.

If a variety was produced that was only different than Dyer in being resistant to Phytophthora root rot, would this not be a novel variety? Example: Chippewa 64, Lindarin 74, Harosoy 63, Clark 63, Pickett 71, and Lee 68. If a variety is susceptible to a disease where Dyer is resistant, but like it in some other traits, is this not also a novel variety?

If a variety was produced that was only 10 days earlier than Wayne, but like it for all seed and plant characters, would the new variety be novel? (A Group I instead of Group III; Chippewa is like Wayne except for flower color and 10-14 days earlier) Would Chippewa be refused a certificate if application were made today? If so, then being 10-15 days later than Hill should also indicate that FFR666 is a novel variety even if it is similar to Hill for some other characteristics.

If a variety was like another except for a single trait - example white flower instead of purple - is that novel enough? Then surely the four characteristics I have listed are sufficient to identify novelty; particularly since no other variety has these same characteristics.

FFR666 has been the shortest variety in a large number of Southeastern and Gulf States tests. Certainly, I can provide you with much 1972 and 1973 data that was not submitted with the original application if there is not sufficient data submitted already to verify that this variety is truly different than all other varieties.

Sincerely yours,

G. Robert Taylor

G. Robert Taylor
Soybean Breeder

#73017

12E Exhibit E:

G. Robert Taylor is Soybean Breeder for Farmers Forage Research Coop; Robert J. Buker is Executive Vice President and General Manager of Farmers Forage Research Coop.