No. 73059

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Mississippi Agricultural & 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 CERTIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

COWPEA

'Mississippi Purple'

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* 18th *day of* November *in the year of our Lord one thousand nine hundred and* seventy-six

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Acting Secretary of Agriculture

73059

Exhibit A, Origin and Breeding History of the Variety

Mississippi 57-1 or M57-1 is a breeding strain of cowpea developed in the program located in the Department of Plant Pathology and Weed Science, Mississippi Agricultural and Forestry Experiment Station. Five plants survived in one-acre field planted to the commercial Brown Sugar Crowder variety in 1949. The other plants were killed by Fusarium wilt. One plant of the five survivors had some of the characteristics of Brown Sugar Crowder. Continued selfing and selection from this single plant (49S1) and the same process applied to two crosses of lines selected from 49S1 led to the single plant selection labeled M57-1. The selection pressure applied was for type, reaction to the Fusarium wilt organisms, and reaction to root-knot nematodes.

Some of the segregants from the original single plant (49S1) showed type characteristics resembling the Iron variety. The assumption has been made that the original plant came from a natural cross of Brown Sugar Crowder and Iron. The resistance to the Fusarium organisms and to root-knot nematodes stabilized in M57-1 appears to be the same as that found in Iron. A further assumption is that the resistance came from Iron in the presumed natural cross.

In 1958 a purple hull crowder labeled Knucklehull Crowder was crossed to M57-1 and the F_1 backcrossed to a selection from M57-1. After 9 generations of selfing and selection for type and disease resistance, a disease-resistant purple hull crowder was obtained. This line (PC 8) was crossed to Mississippi Silver in the fall of 1967 and the F_1 backcrossed to Mississippi Silver in the spring of 1968.

In the sixth generation from the backcross, a single plant selection was bulked and increased. This is the new variety, Mississippi Purple.

One variant was observed during multiplication. This was a very small plant (one-tenth the size of a normal plant) that produced no normal leaves of the trifoliate type but appressed platelets of tissue along a thin stem. These plants never produced seed. In the early stages of multiplication single-plant identity was maintained. This variant appeared in only one of the lines and this line was discarded. The ratio of normal to variant was 3:1. This is a recessive variant. If it appears again, it can be recognized by the small size, absence of trifoliate leaves, and no production of flowers or seed. Since no seed is produced, it will not have to be rogued.

In the increase from the single plant selection to Mississippi Purple, the stock has remained stable in the research plots, increase fields, and at the yield-trial locations. The one significant variant is described above.

73059

EXHIBIT B, BOTANICAL DESCRIPTION OF THE VARIETY

The characteristics of Mississippi Purple as seed and seedlings are typical of the brown crowder type. Under the same growing conditions, the seed are a shade darker brown than seed of Mississippi Silver and may have occasional splashes of purple on the brown background. However, the occasional splashes of purple may occur on seed of other brown crowders that have a purple hull, and there are varying shades of brown in seed of varieties in the brown crowder group. The color and size of the seed of all varieties of the group will vary under different growing and harvesting conditions. It is unlikely that dry seed of these varieties can be consistently distinguished, one from another, and this includes Mississippi Purple.

By the flowering stage, Mississippi Purple and Mississippi Silver can be distinguished from other brown crowders in the same location by vine habit. They have less vine and the peduncles will be clustered more to the center of the plant. The amount of vine will vary with fertility, water supply, and soil type and depth. Thus, precise identification by vine in different locations or years will be difficult. Flowers, specifically, in the brown crowder group are much the same. At fruiting, the pods of Mississippi Purple are reddish-purple opposed to the silver with touches of rose found in pods of Mississippi Silver.

The mature plant is almost the same as Mississippi Silver; a brown crowder type with much less vine, pods concentrated over and a little above the vine, pods that mature over a short span, pods that shell very easily, and high yield of quality

73059

crowder peas. The big difference is in the color of the pods: reddish-purple vs. silver with touches of rose.

EXHIBIT D, DATA INDICATIVE OF NOVELTY

Mississippi Purple most closely resembles Mississippi Silver. They are both brown crowders with crowder seed, green and dry, that are quite similar in shape, size, and color. They have in common a plant type with much less vine than other crowders and a concentration of the pods over the plant with the pods maturing over a short time period. Mississippi Purple and Mississippi Silver are both highly resistant to Races 1, 2, and 3 of *Fusarium oxysporum* f. sp. *tracheiphilum*. Both are resistant to *Meloidogyne incognita*, *M. incognita* var. *acrita*, *M. arenaria*, and *M. javanica*, qualities possessed by no other crowder.

Mississippi Purple is strikingly different from Mississippi Silver in pod color. Pods of Mississippi Purple are bright reddish-purple at green maturity and dark purple when dry. Pods of Mississippi Silver are silver splashed with rose at green maturity and straw color when dry. Associated with pod color, the stems and nodes of Mississippi Purple have purple mixed with green; those of Mississippi Silver are green.

73059

EXHIBIT E, STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

The breeder, Woodrow W. Hare, is a Plant Pathologist in the Department of Plant Pathology and Weed Science, Mississippi Agricultural and Forestry Experiment Station, Mississippi State University. The research which led to the development of the new cowpea variety, Mississippi Purple, was conducted by the breeder as described above under an organized project within the framework of the Station research. Rights to the new variety, Mississippi Purple, shall reside in and with the Mississippi Agricultural and Forestry Experiment Station.

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 Mississippi Purple	2. KIND NAME Cowpea	FOR OFFICIAL USE ONLY PVPO NUMBER 73059
3. GENUS AND SPECIES NAME Vigna sinensis (L.) Endl.	4. FAMILY NAME *(Botanical)* Leguminoseae 5. DATE OF DETERMINATION August 10, 1971	FILING DATE 2-15-72 TIME 3:30 P.M. FEE RECEIVED $750.00 CHARGES —
6. NAME OF APPLICANT(S) Woodrow W. Hare	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* Department of Plant Pathology & Weed Science Drawer PG Mississippi State, MS 39762	8. TELEPHONE AREA CODE AND NUMBER (601) 325-3138
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Mississippi Agricultural & Forestry Experiment Sta.	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION

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

Mississippi 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)

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).

Jan 31, 1973 (DATE) — Woodrow W. Hare (SIGNATURE OF APPLICANT)

Feb 1, 1973 (DATE) — James H. Anderson (SIGNATURE OF APPLICANT)

FORM APPROVED OMB NO. 40-R3712

FORM GR-470-4
(7-76)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
(Cowpea)

INSTRUCTIONS: See Reverse

NAME OF APPLICANT(S): Woodrow W. Hare

VARIETY NAME OR TEMPORARY DESIGNATION: Mississippi Purple

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)
Department of Plant Pathology and Weed Science
Mississippi Agricultural and Forestry Experiment Station
Drawer PG, Mississippi State, Mississippi 39762

FOR OFFICIAL USE ONLY
PVPO NUMBER: 73059

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less.

1. PLANT HABIT AT GREEN SHELL STAGE: [2] 1 = ERECT 2 = SEMIERECT 3 = PROCUMBENT 4 = PROSTRATE

2. PLANT SIZE: [6][0] CM. HIGH AT MATURITY

3. STEM COLOR: [1&2] 1 = GREEN 2 = PURPLE green and purple mixed

4. NODE COLOR: [1&2] 1 = GREEN 2 = PURPLE green and purple mixed

5. FOLIAGE: [2] 1 = OPEN 2 = COMPACT

6. LEAF COLOR (See Reverse): [2] 1 = LIGHT GREEN 2 = MEDIUM GREEN 3 = DARK GREEN

7. LEAF SURFACE: [2] 1 = SMOOTH 2 = BLISTERED [1] 1 = DULL 2 = GLOSSY

8. FLOWER COLOR (See Reverse) [2] 1 = PURPLE 2 = LAVENDER 3 = TINGED 4 = WHITE

9. FIRST FLOWERING [3][8] NUMBER OF DAYS

10. POD:

[3] PLACEMENT: 1 = BELOW FOLIAGE 2 = ABOVE FOLIAGE 3 = AT FOLIAGE LEVEL

[2] LOCATION: 1 = SCATTERED 2 = BUNCHED

[1][8] CM. LONG [0][9] MM. WIDE

[2] CURVATURE: 1 = STRAIGHT 2 = CURVED

[2] CONSTRICTIONS: 1 = NONE 2 = SLIGHT 3 = DEEP

[2] SURFACE (Green shell maturity): 1 = DULL 2 = GLOSSY

[3] COLOR (Green shell maturity): 1 = SILVER-GREEN 2 = GREEN 3 = LIGHT PURPLE 4 = DARK PURPLE

[4] COLOR (Dry maturity): 1 = WHITE 2 = STRAW 3 = DRAB 4 = PURPLE

[3] CROSS SECTION (Green shell stage-width/height): 1 = (1: <) 2 = (1: >) 3 = (1:1)

11. SEED:

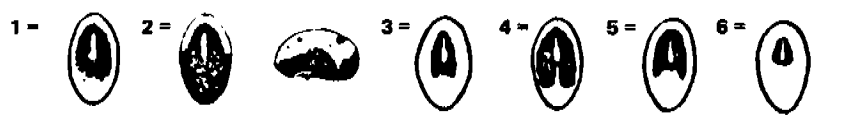
[1][4] NUMBER OF SEEDS PER POD

[3] SHAPE (See Reverse): 1 = KIDNEY 2 = OVATE TO OVOID 3 = CROWDER 4 = GLOBOSE 5 = RHOMBOID

[ ][8] MM. LONG

[ ][6] MM. WIDE

[6] HILAR EYE TYPE:



SPECKLED BLOTCH NARROW BIG SMALL VERY SMALL

[1][9][3] GM. PER 1000 SEEDS

[2] COAT: 1 = WRINKLED 2 = SMOOTH

[1] COLOR PATTERN: 1 = SINGLE COLOR 2 = PATTERNED 3 = MARBLED 4 = SPECKLED

[9] PRIMARY COLOR (Single color or basic color): 1 = PURPLE 2 = BLACK 3 = DULL BLACK 4 = BLUE 5 = RED 6 = COFFEE 7 = MAROON 8 = BUFF OR CLAY 9 = ~~PINK~~ Brown 0 = WHITE

SECONDARY COLORS PRODUCING THE PATTERN, MARBLING OR SPECKLING (Enter a zero in boxes where the colors do not identify the secondary colors.):

NO SECONDARY COLOR

[ ] 1 = PURPLE [ ] 2 = BLACK [ ] 3 = DULL BLACK [ ] 4 = BLUE [ ] 5 = RED

[ ] 6 = COFFEE [ ] 7 = MAROON [ ] 8 = BUFF [ ] 9 = PINK [ ] 0 = WHITE

6

FORM GR-470 (REVERSE)

RECEIVED FEB 15 1973 OF AGRICULTURE AMS, GRAIN DIV. PVPO

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $~~50.00~~ 25.00 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.

12. DISEASE (0 = Not Tested, 1 = Susceptible, 2 = Resistant, 3 = Tolerant)

2	FUSARIUM WILT ALL Race 1 Race 2 Race 3	2	ROOT KNOT NEMATODE 4 of 5 species	1	CHARCOAL ROT	0	ZONATE LEAF SPOT
	RED LEAF SPOT?	1	POWDERY MILDEW	3	COWPEA CHLOROTIC MOTTLE VIRUS	3	SOUTHERN BEAN MOSAIC VIRUS
3	BEAN YELLOW MOSAIC VIRUS	3	CUCUMBER MOSAIC VIRUS	3	BEAN POD MOTTLE VIRUS	0	SOYBEAN CYST NEMATODE
3	COWPEA YELLOW MOSAIC VIRUS	2	BACTERIAL CANKER	1	CERCOSPORA LEAF-SPOT	0	STING NEMATODE
2	RUST	1	SOUTHERN BLIGHT		ROOT ROT Which?		OTHER *(Specify)*

13. INSECT (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

0	MEXICAN BEAN BEETLE	1	COWPEA APHID	2	COWPEA CURCULIO	0	STINK BUGS
0	LESSER CORNSTALK BORER	0	EUROPEAN CORNBORER	0	CORN EARWORM	0	BEET ARMYWORM
1	THRIPS	1	SERPENTINE LEAF MINERS		OTHER *(Specify)*		

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant size	Mississippi Silver	Plant habit	Mississippi Silver
Pod size	Mississippi Silver	Plant pigmentation	Knucklehull Crowder
No. days to maturity	Mississippi Silver	Seed coloration	Mississippi Silver

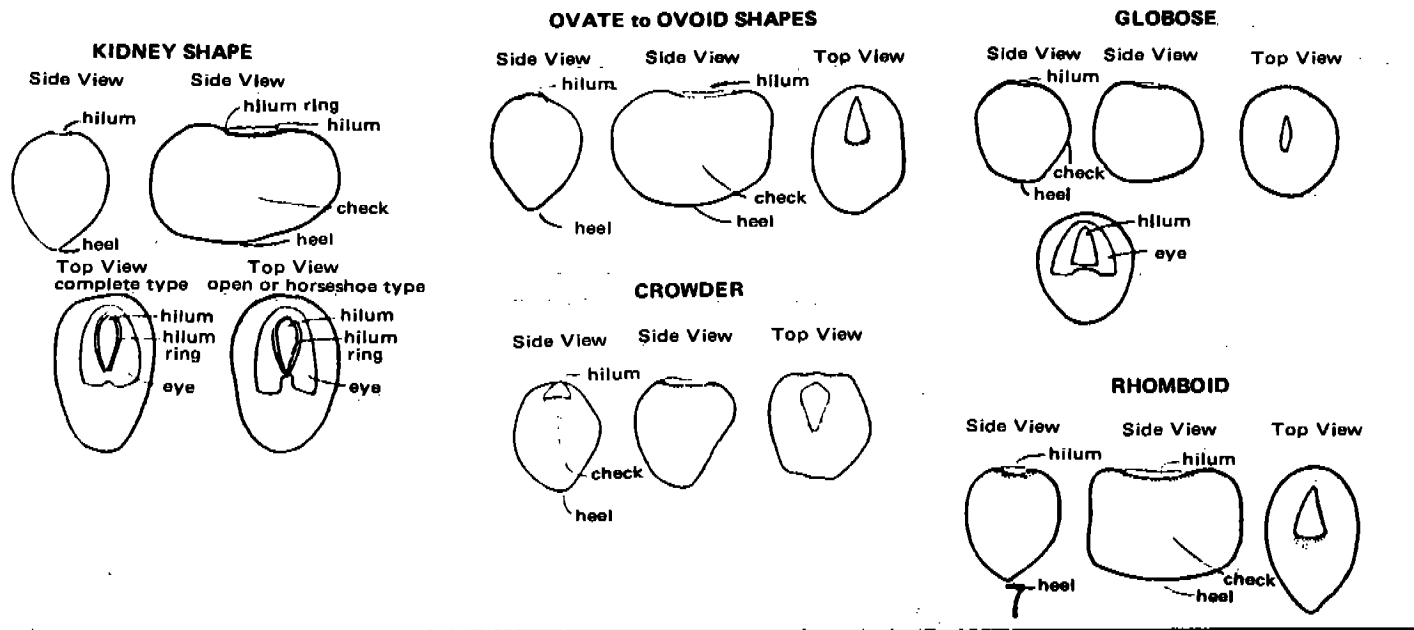
INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for completing this form:

1. C. V. Piper, 1912, Agricultural Varieties of Cowpea and Related Species, U.S.D.A., Bulletin No. 229.
2. L. L. Ligon, 1958, Characteristics of Cowpea Varieties, Oklahoma State University, Bulletin B-518.
3. W. J. Spillman and W. J. Sando, 1929, Mendelian Factors in the Cowpea, papers of the Michigan Academy of Science, Arts and Letters, Vol. XI.

LEAF COLOR: Any recognized color chart may be used to determine the leaf color of the described variety. The following cowpea varieties may be used as a guide to identify colors listed:

1. Light Green - Texas Cream 40 2. Medium Green - Big Boy
3. Dark Green - California Blackeye #5.

FLOWER COLOR: White flower should be treated with a one percent solution of hydrochloric acid to determine if anthocyanin is present. If color appears as a result of the test, classify as tinged.

TERMS USED TO DESCRIBE SHAPES: