No. 7400098

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

COWPEA

'Magnolia Blackeye'

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* 29th *day of* September *in the year of our Lord one thousand nine hundred and* seventy-six

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

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 Magnolia Blackeye	2. KIND NAME COWPEA EXT 9/21/76 ~~Protepea (formerly cowpea)~~	FOR OFFICIAL USE ONLY PVPO NUMBER 7400098	
3. GENUS AND SPECIES NAME Vigna sinensis (L.) Endl.	4. FAMILY NAME *(Botanical)* Leguminoseae 5. DATE OF DETERMINATION August 10, 1973	FILING DATE 5.2.74 FEE RECEIVED $750	TIME 9 A.M. ~~P.M.~~ 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.)* Miss. 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).

April 15, 1974
(DATE)

Woodrow W. Hare
(SIGNATURE OF APPLICANT)

00001

(DATE)

James H. Anderson
(SIGNATURE OF APPLICANT)

EXHIBIT A, ORIGIN AND BREEDING HISTORY OF THE VARIETY

Mississippi 49S1 was one of 5 survivors in a one-acre field planted to the Brown Sugar Crowder variety in 1949 near Columbia, Mississippi. All other plants in the field were killed by Fusarium wilt before fruiting. Four of the survivors were "field" or hard-seeded types and were discarded. M49S1 had some of the characteristics of Brown Sugar Crowder. From continued selfing and selection of progeny of M49S1, several types of ~~protepea~~ COWPEA were stabilized. After the discovery that resistance to Fusarium wilt organisms, root-knot nematodes, and tolerance to many viruses of ~~protepea~~ COWPEA was also segregating in the progeny, selection pressure was continually applied for these traits. It is presumed that this treasure of material originated from a natural cross of Brown Sugar Crowder and Iron. M855 was one of the lines stabilized that had the resistant factors, bean-shaped and tan-colored seed, and very few runners on the vine. Extra Early Blackeye, Bunch Purple Hull, and Dixielee were recognized varieties.

M855 was crossed to Extra Early Blackeye in 1955. After 3 generations, a selection was crossed back to Extra Early Blackeye in 1957 (BC8A). After 6 generations, a selection from BC8A was crossed to BC17A (C34 in 1960). BC17A derived from M855 x Bunch Purple Hull in 1955 with a third generation selection crossed back to Bunch Purple Hull in 1957. The C34 (BC8 x B17A) F_1 was crossed later in 1960 to BC16A (C35). BC16A was a fourth generation selection derived from Dixielee crossed and backcrossed to a third generation selection from BC8A. Selection pressure

for all the facets of type and disease resistance was applied throughout and to progeny of C35 for 11 selfed generations. In 1971 two sister lines from this series were combined as B71S-14B. The increase from B71S-14B is the new variety Magnolia Blackeye.

No variants have been observed during multiplication. The two "sister lines" came from single plants from a row originating from a single plant the previous year. Four-row plots of each could not be distinguished and they were combined. A second way to describe the breeding would be 10 generations of selfing of C35 and a bulk. However, selfed progenies were tested individually for resistance to each disease through the 11 generations. No detectable differences in type were found after 8 generations.

In the increase from the two single plants (or from 1 single plant of generation 10) to Magnolia Blackeye, the stock has remained stable in the research plots, increase fields, and at the yield-trial locations.

EXHIBIT B, BOTANICAL DESCRIPTION OF THE VARIETY

The main characteristics of Magnolia Blackeye as seed and seedlings are typical of the blackeye type. The seed are white with a black "eye" or color around the hilum. Differences are 1) the dry seed are smaller than usual for blackeyes, 2) the shape of dry seed is more blocky than the bean shape, almost oblong, and 3) there is much less wrinkling of the seed coat than most blackeyes with only a scattered amount of fine wrinkling. This lesser wrinkling of the seed coat gives the seed a brighter appearance in mass. Color, and particularly size, of seed will vary under different growing conditions but the three differences above will, in most cases, allow Magnolia Blackeye to be identified. Seedlings of Magnolia Blackeye look much the same as most blackeye seedlings. They do grow off much faster than other blackeyes seen and are very vigorous in early growth compared to any ~~protepea~~ COWPEA EKT 9/21/76 variety.

By the flowering stage, the large, dark green leaves and very light blue blossoms of Magnolia Blackeye cannot be distinguished from other blackeyes. Under average growing conditions there will be none or only a few short runners or twining stems. The near-absence of runners, rounded shape of the mature vine, the production of pods at or slightly above the foliage over the rounded shape, and the pulling over of the long peduncles by the weight of the pods will distinguish Magnolia Blackeye from most other blackeyes.

The pods are green early, turn light yellow-green at green maturity, and finally become straw colored when dry. They are smoother than most

other blackeye pods and do not show as deep indentations between seed. The pods mature over a shorter span from earliest to latest than most blackeyes. Both green mature and dry pods shell readily.

The green mature seed of Magnolia Blackeye have the standard bean shape, a light green color fading to off-white just before drying, and are about average in size compared to other blackeyes. The black "eye" is much the same as found in many other blackeyes. We have not found any distinguishing characteristics at this stage; in fact, we purposefully bred for comparable appearance and quality at green maturity.

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
Magnolia Blackeye

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
7400098

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: [1] 1 = ERECT 2 = SEMIERECT 3 = PROCUMBENT 4 = PROSTRATE

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

3. STEM COLOR: [1] 1 = GREEN 2 = PURPLE

4. NODE COLOR: [1] 1 = GREEN 2 = PURPLE

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

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

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

[2] 1 = DULL 2 = GLOSSY

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

9. FIRST FLOWERING [3][7] NUMBER OF DAYS

10. POD:

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

[2] LOCATION: 1 = SCATTERED 2 = BUNCHED

[1][7] CM. LONG [0][7] MM. WIDE

[1] CURVATURE: 1 = STRAIGHT 2 = CURVED

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

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

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

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

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

11. SEED:

Dry; 1 for green shell

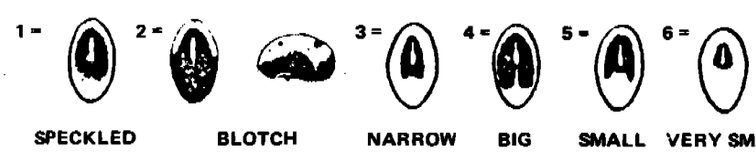
[1][2] NUMBER OF SEEDS PER POD

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

[0][8] MM. LONG

[0][5] MM. WIDE

[5] HILAR EYE TYPE:



[1][5][0] GM. PER 1000 SEEDS

Eye color: Black

[1] COAT: 1 = WRINKLED 2 = SMOOTH

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

[0] 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 0 = WHITE

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

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

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

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INSTRUCTIONS

RECEIVED

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

EXHIBIT D, DATA INDICATIVE OF NOVELTY

The novelty of Magnolia Blackeye is unique in a combination of plant type, appearance of dry seed, and disease resistance that sets it off from any other blackeye.

Though not closely resembling any other variety, Magnolia Blackeye overall resembles most Extra Early Blackeye (EEB), one of the parents. Leaf type, peduncle growth, pod placement and development, eye size and shape, and a number of other characters are similar and come from the parent to Magnolia Blackeye.

However, there are striking differences. Magnolia Blackeye is a "bush" type with no runners in long days while Extra Early Blackeye has typical runners. With shorter days, runners do appear on Magnolia Blackeye but never as long as EEB. The "bush" habit of Magnolia Blackeye is rounded in shape and pods are produced over the mound.

Green-mature seed are kidney-shaped and quite similar to EEB. When dry, they are blocky to almost oblong, very small (2,700 or more per pound), and have only scattered, very fine wrinkling of the seed coat with a bright appearance in mass. This is in marked contrast to EEB (and other blackeye varieties) with bean to semi-bean shape, much larger size, seed coat wrinkling, and a dull appearance in mass.

Magnolia Blackeye is highly resistant to Races 1, 2, and 3 of *Fusarium oxysporum* f. sp. *tracheiphilum*, resistant to *Meloidogyne incognita*, *M. incognita* var. *acrita*, *M. arenaria*, and *M. javanica*, and tolerant to many virus diseases of the crop. EEB has only resistance to Race 1 of the wilt organism, none to nematodes, and is susceptible to the viruses. A few blackeye varieties have nematode resistance, otherwise they are all the same as EEB and in great contrast to Magnolia Blackeye.

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 protepea variety, Magnolia Blackeye, was conducted by the breeder as described above under an organized project within the framework of the Station research. Rights to the new variety, Magnolia Blackeye, shall reside in and with the Mississippi Agricultural and Forestry Experiment Station.

FORM GR-470-4 (REVERSE)

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
3	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	Monarch	Plant habit	Princess Anne
Pod size	Extra Early Blackeye	Plant pigmentation	Most blackeyes
No. days to maturity	Extra Early Blackeye	Seed coloration	Extra Early Blackeye

INSTRUCTIONS

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

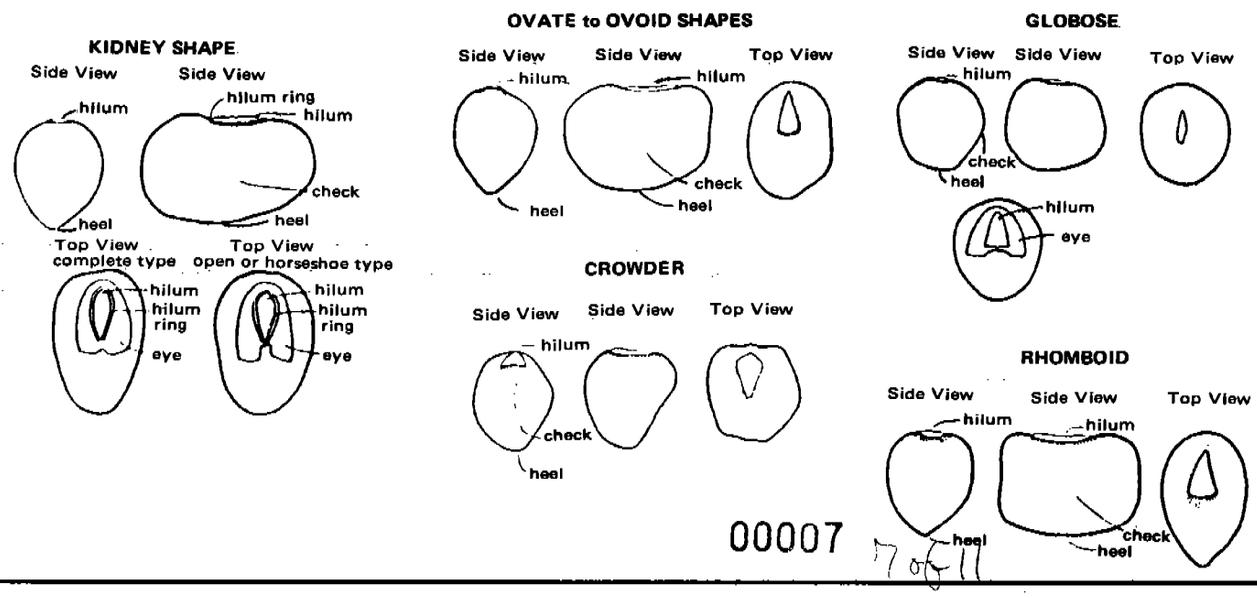
1. C. V. Piper, 1912, Agricultural Varieties of Cowpea and Related Species, U.S.D.A., Bulletin No. 229.
2. L. L. Ligon, 1958, Characteristics of Cowpea Varieties, Oklahoma State University, Bulletin B-518.
3. W. J. Spillman and W. J. Sando, 1929, Mendelian Factors in the Cowpea, papers of the Michigan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



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