

# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Bobshaw Pedigreed Seed Company

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.

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

COTTON

'Dixie King III'

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 27th day of June in the year of our Lord one thousand nine hundred and seventy-five

Attest:

*J. J. Rollins*  
Commissioner  
Plant Variety Protection Office  
Grain Division  
Agricultural Marketing Service

*Earl L. Buttz*

Secretary of Agriculture



APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: See Reverse.

1. VARIETY NAME OR TEMPORARY DESIGNATION <b>Dixie King III</b>	2. KIND NAME <b>Cotton</b>	FOR OFFICIAL USE ONLY	
		PVPO NUMBER <b>73089</b>	
3. GENUS AND SPECIES NAME <b>Gossypium hirsutum L.</b>	4. FAMILY NAME (Botanical) <b>Malvaceae</b>	FILING DATE <b>4-30-73</b>	TIME <b>1:30 P.M.</b>
	5. DATE OF DETERMINATION <b>January 1972</b>	FEE RECEIVED <b>\$ 750</b>	CHARGES
6. NAME OF APPLICANT(S) <b>Stoneville Pedigreed Seed Company BOBshaw PEDIGREED SEED COMPANY</b> <i>SP 6.4.75</i>	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) <b>P. O. Box 167 Stoneville, Mississippi 38776</b>	8. TELEPHONE AREA CODE AND NUMBER <b>601-686-2334</b>	
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.) <b>Corporation</b>	10. STATE OF INCORPORATION <b>Mississippi</b>	11. DATE OF INCORPORATION <b>Sept. 1922</b>	

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

**Dr. G. R. Walker, Sr., President  
Stoneville Pedigreed Seed Company  
P. O. Box 167  
Stoneville, Mississippi 38776**

**Dr. C. W. Manning, Director of Research  
Stoneville Pedigreed Seed Company  
P. O. Box 167  
Stoneville, Mississippi 38776**

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- 12A. Exhibit A, Origin and Breeding History of the Variety (See Section 52, P.L. 91-577)
- 12B. Exhibit B, Botanical Description of the Variety
- 12C. Exhibit C, Objective Description of the Variety
- 12D. Exhibit D, Data Indicative of Novelty
- 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  NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations?  YES  NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? **TWO**

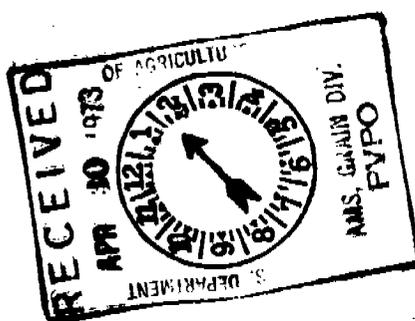
Applicant is informed that false representation herein can jeopardize protection and result in penalties.

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)  
**April 23, 1973**  
(DATE)

\_\_\_\_\_  
(SIGNATURE OF APPLICANT)  
*C. W. Manning*  
\_\_\_\_\_  
(SIGNATURE OF APPLICANT) **1**

## INSTRUCTIONS



**GENERAL:** Send an original copy of the application, exhibits and \$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 unless 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 A, ORIGIN AND BREEDING HISTORY OF THE VARIETY

Mr. P. H. Brown, Plant Breeder, Bobshaw Pedigreed Seed Company, Indianola, Mississippi, developed the variety of cotton marketed as Dixie King II. Reselection within this variety resulted in the isolation of a strain designated as No. 6374. Though this strain possessed many characteristics which would have made it suitable as a commercial release, replicated field tests and laboratory analysis of fiber samples revealed its lack of acceptable fiber length.

In 1963 the breeding material of the Bobshaw Pedigreed Seed Company was transferred to the Stoneville Pedigreed Seed Company and continued reselection of Strain 6374, corrected the fiber length deficiency by the isolation of Strain 77375 in 1967. Following progeny row testing in 1968, this strain was included in replicated field tests at Stoneville, Mississippi and later in tests conducted by various State and Federal Stations in the South and Southeastern areas as Dixie King 375. It is being released as Dixie King III.

No definite effort was made to determine the type and frequency of variants which may have occurred during the development of Dixie King III. Following its inclusion in replicated field trials, multiplication seed blocks have been maintained. Individual plant selections made each year from these blocks were planted in progeny rows the following year.

In 1969 the seed of Strain 77375 was multiplied in a fractional acre block from which nine plant selections were made on the basis of field evaluations. Of the nine progeny rows in 1970, seven were considered worthy of additional laboratory examination. The data as obtained are

summarized in the following table.

Progeny Row No.	Lint per- cent	Boll size	Fiber strength (T <sub>1</sub> )	Fiber length (2.5% Span)	Fiber fineness (Micronaire)
97426	38.9	66	21.6	1.12	4.4
97427	39.9	67	22.5	1.13	4.6
97429	39.7	68	22.4	1.14	4.4
97431	39.9	65	21.8	1.11	4.6
97432	40.5	68	21.0	1.10	4.6
97434	39.7	68	21.8	1.12	4.4
97436	40.5	65	21.6	1.09	4.7

In 1970 the seed multiplication block was increased to three acres. Twenty-one plant selections were made and planted in progeny rows in 1971. Seven of these progeny rows were selected for more detailed evaluation. The data obtained from laboratory analysis of these progenies are shown in the following table.

Progeny Row No.	Lint per- cent	Boll size	Fiber strength (T <sub>1</sub> )	Fiber length (2.5% Span)	Fiber fineness (Micronaire)
07296	40.3	68	23.3	1.13	4.5
07298	40.3	72	22.7	1.11	4.3
07301	40.9	70	22.1	1.10	4.4
07307	39.9	68	22.1	1.11	4.6
07311	40.8	72	22.8	1.09	4.4
07314	40.3	67	22.1	1.12	4.6
07315	40.2	70	23.0	1.12	4.6

In 1972 a total of thirty-nine progeny rows were planted from seed of

individual plant selections of Strain 77375 made in 1971. The data obtained from eight of those selected for additional tests are given in the following table.

Progeny Row No.	Lint per- cent	Boll size	Fiber strength (T <sub>1</sub> )	Fiber length (2.5% Span)	Fiber fineness (Micronaire)
17284	39.5	70	23.9	1.08	4.6
17292	40.0	67	24.3	1.07	4.8
17294	39.3	69	24.2	1.09	4.8
17303	39.6	68	23.6	1.07	4.5
17313	39.7	70	23.6	1.07	4.6
17315	39.9	70	24.2	1.08	4.8
17316	39.7	68	23.6	1.08	4.8

The progeny rows not considered for more detailed study were discarded not on the basis of being sports or off-type plants, but because of their inferiority in one or more traits such as fiber length, storm resistance, etc. From our study of these selections in the field and the data obtained from the laboratory it does not appear that variants can be considered a problem.

It can be pointed out that our concern about improving the fiber length of this new cotton, causes us to be critical of those selections which exhibit shorter staple. These do occur, but their frequency has not been established.

Additional evidence of the genetic stability of Dixie King III can be illustrated by presenting the range of values of certain traits obtained from the seven progeny rows in 1970 as compared to the data of seven progeny

rows of Dixie King II planted in the same field on the same day. Dixie King II is an established variety released in 1964 which has been subjected to considerable reselection since that time.

Characteristic	Dixie King III	Dixie King II
Lint percentage	38.9-40.5	38.4-39.3
Boll size	65-68	56-71
Fiber strength ( $T_1$ )	21.0-22.5	20.6-21.5
Fiber length (2.5% Span)	1.09-1.14	1.06-1.09
Fiber fineness (Micronaire)	4.4-4.7	4.5-4.8

It should be remembered that unreplicated data is subject to variations caused by environmental conditions as well as sampling errors. This may, in part, account for one progeny of Dixie King II having a boll size of 71 while the others ranged from 56 to 62. At the same time this may be the same reason for one strain of Dixie King III having a  $T_1$  value of 21.0 while the others ranged from 21.8 to 22.5. Since these strains were not saved for continued testing there is no way to establish whether these were true values or the result of uncontrolled variations.

## EXHIBIT B, BOTANICAL DESCRIPTION OF THE VARIETY

The seed of Dixie King III have an index of about twelve depending on growing conditions. This compares with an index of thirteen for Dixie King II. The plant of Dixie King III is similar in height to Dixie King II but has less total foliage by having smaller leaves produced on a more upright plant structure.

Average data from ten replicated field tests at Stoneville, Mississippi for a period 1969 to 1972, compares yield, crop maturity, lint percentage, boll size, fiber strength, fiber length and fiber fineness of Dixie King II and Dixie King III.

Characteristic	Dixie King II	Dixie King III
Yield per acre (Lbs.)	891	956
Crop maturity (Percent)	84	89
Lint percentage	37.7	38.2
Boll size	59	66
Fiber strength ( $T_1$ )	22.5	23.4
Fiber length (2.5% Span)	1.07	1.09
Fiber fineness (Micronaire)	4.94	4.90

As the data indicate, Dixie King III produces an earlier crop at Stoneville than does Dixie King II. It has a smaller boll and higher lint percentage. The fiber of Dixie King III is stronger and longer with similar fineness.

OBJECTIVE DESCRIPTION OF VARIETY  
COTTON (GOSSYPIUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S) <b>Dr. G. R. Walker, Sr.</b>		FOR OFFICIAL USE ONLY	
ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code) <b>BOB SHAW PEDIGREED SEED Co. b.475 Stoneville Pedigreed Seed Company, P. O. Box 167 Stoneville, Mississippi 38776</b>		PVPO NUMBER <b>73089</b>	VARIETY NAME OR TEMPORARY DESIGNATION <b>DIXIE King III</b>

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

1. SPECIES:

1 = GOSSYPIUM HIRSUTUM      2 = GOSSYPIUM BARBADENSE

2. AREA(S) OF ADAPTION (0 = Not Tested, 1 = Not Adapted, 2 = Adapted):

EASTERN       DELTA       CENTRAL       HIGH PLAINS       EL PASO AREA

WESTERN LOW HOT VALLEYS       SAN JOAQUIN       OTHER (Specify) \_\_\_\_\_

3. MATURITY (50% Open Boll):

<input type="text" value="0"/> <input type="text" value="4"/> NO. OF DAYS EARLIER THAN	<input type="text" value="8"/> } 1 = COKER 310    2 = DELTAPINE 16    3 = STONEVILLE 213
<input type="text" value=""/> <input type="text" value=""/> NO. OF DAYS LATER THAN	<input type="text" value=""/> } 4 = PAYMASTER 111    5 = ACALA 1517-70    6 = ACALA SJ-1
	7 = LANKART 57    8 = OTHER (Specify) <b>Dixie King II</b>

4. PLANT HABIT:

1 = SPREADING    2 = INTERMEDIATE    3 = COMPACT       3 } 1 = FOLIAGE SPARSE    2 = DENSE

3 = OTHER (Specify) **Intermediate**

5. PLANT HEIGHT:

<input type="text" value=""/> <input type="text" value=""/> CM. SHORTER THAN	<input type="text" value=""/> } 1 = COKER 310    2 = DELTAPINE 16    3 = STONEVILLE 213
<input type="text" value="0"/> <input type="text" value="4"/> CM. TALLER THAN	<input type="text" value="8"/> } 4 = PAYMASTER 111    5 = ACALA 1517-70    6 = ACALA SJ-1
	7 = LANKART 57    8 = OTHER (Specify) <b>Dixie King II</b>

6. MAIN STEM:

1 = LAX    2 = ASCENDING    3 = ERECT       CM. TO FIRST FRUITING BRANCH       NO. OF NODES TO FIRST FRUITING BRANCH (from cotyledonary node)

7. LEAF:

CM. WIDTH OF WIDEST LEAVES AT MATURITY

8. LEAF PUBESCENCE:

} 1 = GLABROUS (HAIRS AS SPARSE AS D<sub>2</sub> SMOOTH)  
2 = SMOOTH LEAF (DELTAPINE SMOOTH LEAF)    3 = PUBESCENT (STONEVILLE 213)  
4 = HEAVY PUBESCENCE (H<sub>1</sub> OR H<sub>2</sub>)    5 = OTHER (Specify) \_\_\_\_\_

9. LEAF COLOR:

1 = VIRESCENT YELLOW    2 = LIGHT GREEN    3 = DARK GREEN (Acala-442)    4 = RED

5 = OTHER (Specify) \_\_\_\_\_

10. LEAF TYPE:

1 = NORMAL    2 = OKRA    3 = SUPER OKRA    4 = OTHER (Specify) \_\_\_\_\_

11. FLOWER:

1 = NECTARILESS    2 = NECTARIED

Petals: 1 = CREAM    2 = YELLOW       Pollen: 1 = CREAM    2 = YELLOW

12. FRUITING BRANCH TYPE:

1 = CLUSTER    2 = SHORT    3 = NORMAL       2 } *984 7/9/74 letter*  
1 = DETERMINATE    2 = INDETERMINATE

13. GOSSYPOL CONDITION:

1 = GLANDLESS    2 = REDUCED GLANDS    3 = NORMAL GLANDS       1 } 1 = NORMAL BUD GOSSYPOL  
4 = OTHER (Specify) \_\_\_\_\_    2 = HIGH BUD GOSSYPOL

14. SEEDS:

±  SEED INDEX (Fuzzy seed basis)       2 } 1 = SPARSE (GREGG 35)    2 = MODERATE (DPL-16)  
Seed Fuzz: 3 = HEAVY (ACALA SJ-1)    4 = OTHER (Specify) \_\_\_\_\_

73089

The data presented in the first three tables in this section offer good evidence about the stability of this new variety.

Characteristic	1970	1971	1972
Lint percentage	38.9-40.5	39.9-40.9	39.3-40.7
Boll size	65-68	67-72	67-70
Fiber strength (T <sub>1</sub> )	21.0-22.5	22.1-23.3	23.6-24.3
Fiber length (2.5% Span)	1.09-1.14	1.09-1.13	1.07-1.09
Fiber fineness (Micronaire)	4.4-4.7	4.3-4.6	4.5-4.8

It is our conclusion that variants in Strain 77375 are no more numerous than those found in any well-bred variety. Likewise, variants of an extreme nature have not been noted either in selections made directly from Strain 77375 or within lines derived from it. Trouble in these areas is not anticipated unless, of course, breeding techniques effect too much genetic purity.

15. BOLLS:

2 Locules: 1 = 3-4  
2 = 4-5

NO. SEEDS PER BOLL  3  8  2 LINT PERCENT  3  1 MM. DIAMETER

2 Pitted: 1 = NONE  
2 = FINELY  
3 = COURSELY

6  9  0 GRAMS SEED COTTON PER BOLL

2 Breadth: 1 = BROADER AT BASE  
2 = BROADER AT MIDDLE

3 Type: 1 = STORMPROOF (WESTBURN 70)  
2 = STORM RESISTANT (LANKART 57)  
3 = OPEN (DELTAPINE 16)

3 Shape: 1 = LENGTH < WIDTH  
2 = LENGTH = WIDTH  
3 = LENGTH > WIDTH

16. BRACTEOLAS:

3 Breadth: 1 = LENGTH < WIDTH 2 = LENGTH = WIDTH 3 = LENGTH > WIDTH

2 Teeth: 1 = FINE 2 = COURSE

3 Teeth: 1 = 3-4 2 = 5-7 3 = 8-10  
4 = OTHER (Specify) \_\_\_\_\_

17. YIELD: Compared to--

PERCENT LESS THAN

7  3 PERCENT MORE THAN

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 219  
4 = PAYMASTER II 5 = ACALA 1517-70  
6 = ACALA SJ-1 7 = LANKART 57 8. Dixie King II

18. FIBER LENGTH (Complete one or more of the following and give the means):

SPAN LENGTH 50%  1  0  9 SPAN LENGTH 2.5%  U.H.M. LENGTH

MEAN LENGTH  STAPLE LENGTH 32nd INCHES

UNIFORMITY RATIO (MEAN/U.H.M.)  4  7 UNIFORMITY INDEX (50% SPAN/2.5% SPAN)

19. FIBER STRENGTH AND ELONGATION:

9  3 1,000 P.S.I.  4  7 ELONGATION E<sub>1</sub>  STILOMETER T<sub>0</sub>

4  9  0 MICRONAIRE READING  YARN STRENGTH (Give test method)  2  3  4 STILOMETER T<sub>1</sub>

20. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

2 VERTICILLIUM WILT  2 FUSARIUM WILT  2 ROOT KNOT NEMATODE  0 BACTERIAL BLIGHT (Race 1)

0 BACTERIAL BLIGHT (Race 2)  0 ASCOCHYTA BLIGHT  0 PHYMATOTRICHUM ROOT ROT  0 RHIZOCTONIA

0 ANTHRACNOSE  0 RUST  OTHER (Specify) \_\_\_\_\_

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

0 BOLL WEEVIL  0 APHID  0 FLEAHOPPER  0 LEAFWORM

0 FALL ARMYWORM  0 GRASSHOPPER  0 LYGUS  0 PINK BOLLWORM

0 STINKBUG  0 THRIP  0 CUTWORM  0 SPIDERMITE

OTHER (Specify) \_\_\_\_\_

REFERENCES: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

- (1) Brown, Harry B., and J. O. Ware, 1958, Cotton, McGraw-Hill Book Company, Inc., New York.
- (2) Lewis, C. F., and H. H. Ramey, Jr., 1971, 1970 Regional Cotton Variety Tests, ARS 34-130, United States Department of Agriculture.

COLORS: Nickerson's or any recognized color fan may be used to determine flower color of the described variety.

Exhibit D  
'Dixie King III'

PV # 7300089

'Dixie King III' resembles 'Dixie King II' more closely than other varieties but 'Dixie King III' matures 4 days earlier, has a smaller boll <sup>cum 6.87</sup> ~~6.67~~ vs. 7.70 grs.), higher lint percent (38.2 vs. 37.7%), has stronger (23.4 vs. 22.5 grs/tex) and longer fiber (1.09 vs. 1.07 inches) and has smaller leaves.

Jan 3, 1975  
(Date)

C. W. Manning  
(Signature)

73089

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

As shown under Item 9 of the application the Stoneville Pedigreed Seed Company, Stoneville, Mississippi, is the applicant. The application has been signed by the Director of Research who is the actual breeder and is acting as an employee of the company.

BOB SHAW PEDIGREED SEED Co. (ltr. 5.29.75) <sup>(S)</sup>  
Stoneville Pedigreed Seed Co. is the owner  
of DIXIE KING III (ltr. 7/9/74 381#)