TO ALL TO WHOM THESE PRESENTS SHALL COME:

Louisiana Agricultural Experiment Station

Whereas, there has been presented to the

Secretary of Agriculture

an application requesting a certificate of protection for an alleged distinct variety of sexually reproduced, or tuber propagated 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 hereto, 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 twenty 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 conditioning it for propagation, or stocking it for any of the above purpose, 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.)

COTTON
PM 1220 BG

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 thirteenth day of December, in the year two thousand two.

[Signature]

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service
APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)
   LOUISIANA AGRICULTURAL EXPERIMENT STATION

4. ADDRESS (street and no. or R.F.D. no., city, state and ZIP)
   P.O. BOX 25055
   BATON ROUGE, LA 70894-5055

7. GENUS AND SPECIES NAME
   Gossypium hirsutum

8. FAMILY NAME (Botanical)
   MALVACEAE

9. CROP KIND NAME (Common Name)
   UPLAND COTTON

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.)
    PUBLIC AGRICULTURAL RESEARCH ORGANIZATION

12. DATE OF INCORPORATION
    3/11/97

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
    DR. R. LARRY ROGERS, DIRECTOR
    LAES
    P.O. BOX 25055
    BATON ROUGE, LA 70894-5055

14. TELEPHONE (include area code)
    (504) 388-4181

15. FAX (include area code)
    (504) 388-6032

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)
    a. □ Exhibit A, Origin and Breeding History of the Variety
    b. □ Exhibit B, Novelty Statement
    c. □ Exhibit C, Objective Description of Variety
    d. □ Exhibit D, Additional Description of Variety
    e. □ Exhibit E, Statement of the Basis of Applicant's Ownership
    f. □ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office
    g. □ Filing and Examination Fee ($2,325) made payable to "Treasurer of the United States"

17. 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) of the Plant Variety Protection Act)
    □ YES (if "YES," answer items 18 and 19 below) □ NO (if "NO," go to item 20)

18. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
    □ YES □ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
    □ FOUNDATION □ REGISTERED □ CERTIFIED

20. HAS THE VARIETY BEEN REleased, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
    □ YES (if "YES," GIVE NAMES OF COUNTRIES AND DATES) □ NO

21. The applicant(s) declares that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

   The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in section 31.5 of the Plant Variety Protection Act and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

   Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT (Owner(s))

NAME (Please print or type)

R. LARRY ROGERS

CAPACITY OR TITLE

DIRECTOR

DATE 2/14/97

(See reverse for instructions and information collection burden statement)
PLANT VARIETY PROTECTION APPLICATION
EXHIBIT A
ORIGIN AND BREEDING HISTORY

PAYMASTER VARIETY PM 1220 BG

PM 1220 BG is a transgenic cotton variety developed by Paymaster Technology Corp., 2476 Hwy 130 East, Stuttgart, AR 72160 by transferring through the backcrossing breeding method the Monsanto developed Bollgard™ gene, from Bacillus thuringiensis (Bt), from transformed Coker 312 to the recurrent parent H 1220. PM 1220 BG is H 1220 (3) // H1215 / Coker 312 Bt. The initial cross H 1215 (LA870206) x Coker 312 Bt was made by Monsanto at St. Louis, MO. Three backcrosses to H 1220 (LA870210) were made by Paymaster at Stuttgart. LA870210 was selected by Dr. Jack E. Jones, Louisiana State University, Baton Rouge from the cross MCT 8-27-8C (Crop Sci. 28:1035) by LA HG 063 (Crop Sci. 28:200).

The MBC₃F₂ bulk population was grown in Puerto Rico October - April 1994-95. MBC₃F₃ progeny rows were grown at Wabbaseka, AR the summer of 1995. Leaf samples from 48 plants were analyzed for Bt protein from each F₃ row with segregating rows destroyed before flowering. Rows of H 1220 were planted for comparison of maturity, plant type, yield, fruiting patterns and fiber properties. Before harvest 50 seeds were analyzed per row to confirm homozygosity for Bt. Fifty bolls were picked from each row for fiber properties. Rows similar to H 1220 were harvested and planted separately in Argentina the winter of 1995-96. Prior to harvest at least 200 seeds were analyzed for the Bt protein and observations were made for type and maturity. Eight lines were bulked to constitute the variety.

Performance tests were conducted in 1996 by Paymaster at ten locations in the Mid-South and Texas to evaluate yield, maturity, agronomic characters and fiber properties. Gene equivalency tests to evaluate insect tolerance were grown at three locations by Monsanto and at Mississippi State University in 1996.

The recurrent parent H 1220 (LA870206) was acquired from Louisiana State University (LAES) in 1992 in an agreement between LAES and Jacob Hartz Seed Company, Inc., P.O. Box 946, Stuttgart, AR 72160, granting Hartz exclusive marketing and product development rights of H 1220 cotton. On February 2, 1996 Delta and Pine Land Company, P.O. Box 157, Scott, MS 38772, acquired all cotton rights from Jacob Hartz Seed Company. The organization is now referred to as Paymaster Technology Corp., a wholly owned subsidiary of Delta and Pine Land Company.
PLANT VARIETY PROTECTION APPLICATION
EXHIBIT B
NOVELTY STATEMENT

VARIETY: PM 1220 BG

PM 1220 BG is most similar to its recurrent parent H 1220, but PM 1220 BG has the Monsanto developed Bollgard™ gene from Bacillus thuringiensis (Bt). PM 1220 BG has higher micronaire that PM 1244 BG. Fiber strength of PM 1220 BG is lower than PM 1215 BG.
NAME OF APPLICANT (S)  | TEMPORARY DESIGNATION | VARIETY NAME
---------------------|-----------------------|---------------
Louisiana Agricultural Experiment Station | Hx 6250 | PM 1220 BG

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)  | FOR OFFICIAL USE ONLY | PVPO NUMBER
---------------------------------|-----------------------|------------------
P.O. Box 25055
Baton Rouge, LA 708949-5055 | | 9700124

Place the appropriate data that describes the varietal characteristic of this variety in the space provided. Characteristics described, including numerical measurements, should represent those that are typical for the variety. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characters marked with an asterisk * indicate necessary characters to be measured.

SPECIFIC VARIETIES USED FOR COMPARISON AS CHECK VARIETIES IN THIS APPLICATION: Use standard regional check varieties which are adapted to your area. One of the comparison varieties must be the most similar variety used in Exhibit B.

1. H1220  
2. DP 50  
3. 

*1. SPECIES:  
G. hirsutum L.  
G. barbadense L.

*2. AREA(S) OR ADAPTATION: (A = Adapted, NA = Not Adapted, NT = Not Tested)  
A Eastern  
A Delta  
NT Central  
NT Blacklands  
NT Plains  
NT Western  
A Arizona  
NT San Joaquin  
Other (Specify)  

*3. GENERAL: Characteristics which are known to be variable but are still useful for a meaningful description of the variety.

<table>
<thead>
<tr>
<th>Application Variety</th>
<th>Comparison Variety 1</th>
<th>Comparison Variety 2</th>
<th>Comparison Variety 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant Habit: Spreading, Intermediate, Compact</td>
<td>Intermediate</td>
<td>Intermediate</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Fruiting Branch: Clustered, Short, Normal</td>
<td>Normal</td>
<td>Normal</td>
<td>Normal</td>
</tr>
<tr>
<td>Leaf Color: Greenish yellow, Light green, Dark green</td>
<td>Light Green</td>
<td>Light Green</td>
<td>Medium Green</td>
</tr>
</tbody>
</table>

* Sparse foliage as plant reaches maturity
**3. GENERAL:** (continued)  
Boll Shape: Length less than width,  
Length equal to width,  
Length more than width  
\[ \text{L} > \text{W} \]  
\[ \text{L} > \text{W} \]  
\[ \text{L} > \text{W} \]  
Boll Breadth: Broadest at base,  
Broadest at middle  
\[ \text{Middle} \]  
\[ \text{Middle} \]  
\[ \text{Middle} \]  

**4. MATURITY:** (50 % Open Bolls; Preferred Method; Describe Method If Different Method Was Used)  
% First Pick  
Date of 50 % open bolls  
\[ 90.8 \text{ a} \]  
\[ 90.2 \text{ a} \]  
\[ 86.1 \text{ b} \]  

**5. PLANT:**  
Cm to 1st Fruiting Branch  
(from cotyledonary node)  
\[ 19.2 \]  
\[ 21.5 \]  
\[ 16.0 \]  
No. of Nodes to 1st Fruiting Branch  
(excluding cotyledonary node)  
\[ 5.4 \]  
\[ 5.6 \]  
\[ 5.0 \]  
Mature Plant Height cm (from cotyledonary node to terminal)  
\[ 8.7 \text{ a} \]  
\[ 9.0 \text{ b} \]  
\[ 8.5 \text{ b} \]  

**6. LEAF:** Upper most, fully expanded leaf.  
Type: Normal, Sub Okra,  
Okra, Super Okra  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
Pubescence: Absent, Sparse, Medium  
\[ \text{Sparse} \]  
\[ \text{Sparse} \]  
\[ \text{Very Sparse} \]  
Dense OR Trichomes/sp. cm  
Bottom surface excluding veins  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
Nectaries: Present or Absent  
\[ \text{Present} \]  
\[ \text{Present} \]  
\[ \text{Present} \]  

**7. STEM PUBESCENCE:** Glabrous, Intermediate, Hairy  
Application Variety  
\[ \text{Intermediate} \]  
\[ \text{Intermediate} \]  
\[ \text{Hairy} \]  

**8. GLANDS:** (Gossypol) Absent, Sparse, Normal, More Than Normal  
Application Variety  
Leaf: Normal  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
Stem: Normal  
\[ \text{Normal} \]  
\[ \text{Normal} \]  
\[ \text{Normal} \]  

**9. FLOWER:**  
Petals: Cream, Yellow  
\[ \text{Cream} \]  
\[ \text{Cream} \]  
\[ \text{Cream} \]  
Pollen: Cream, Yellow  
\[ \text{Cream} \]  
\[ \text{Cream} \]  
\[ \text{Cream} \]  
Petal Spot: Present, Absent  
\[ \text{Absent} \]  
\[ \text{Absent} \]  
\[ \text{Absent} \]  
* not rated
## SEED:

<table>
<thead>
<tr>
<th>Application Variety</th>
<th>Comparison Variety 1</th>
<th>Comparison Variety 2</th>
<th>Comparison Variety 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seed Index (g/100 seed, fuzzy basis)</td>
<td>1.2.2 a</td>
<td>1.2.7 a</td>
<td>1.0.8 b</td>
</tr>
<tr>
<td>Lint Index (g lint/100 seeds)</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
</tbody>
</table>

## BOLL:

<table>
<thead>
<tr>
<th>Application Variety</th>
<th>Comparison Variety 1</th>
<th>Comparison Variety 2</th>
<th>Comparison Variety 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lint Percent (X Picked __ Pulled)</td>
<td>3.9.7 a</td>
<td>3.9.6 a</td>
<td>3.6.3 b</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gin Turnout (_Picked __ Stripped)</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
<tr>
<td>Number of Seed per Boll</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
<tr>
<td>Grams Seed Cotton per Boll</td>
<td>5.7.2 a</td>
<td>5.7.5 a</td>
<td>5.4.5 a</td>
</tr>
<tr>
<td>Number of Locules per Boll</td>
<td>Mostly 4</td>
<td>Mostly 4</td>
<td>Mostly 4</td>
</tr>
<tr>
<td>Boll Type (Stormproof, Storm Resistant, Open)</td>
<td>Storm Res.</td>
<td>Storm Res.</td>
<td>Open</td>
</tr>
</tbody>
</table>

## FIBER PROPERTIES:

Specify Method (HVI or other): HVI

<table>
<thead>
<tr>
<th>Application Variety</th>
<th>Comparison Variety 1</th>
<th>Comparison Variety 2</th>
<th>Comparison Variety 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (inches, 2.5% SL)</td>
<td>1.1.4 a</td>
<td>1.1.5 a</td>
<td>1.1.4 a</td>
</tr>
<tr>
<td>Uniformity (%)</td>
<td>8.6</td>
<td>8.7</td>
<td>8.5</td>
</tr>
<tr>
<td>Strength, T1 (g/tex)</td>
<td>2.8.2 a</td>
<td>2.9.1 a</td>
<td>2.8.0 a</td>
</tr>
<tr>
<td>Elongation, E1 (%)</td>
<td>7.4</td>
<td>7.7</td>
<td>7.2</td>
</tr>
<tr>
<td>Micronaire</td>
<td>4.7.2 a</td>
<td>4.9.2 a</td>
<td>4.7.1 a</td>
</tr>
<tr>
<td>Fineness (Source_______)</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
<tr>
<td>Yarn Tenacity (cN/tex, 27 tex)</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
<tr>
<td>Yarn Strength (lbs. 22's)</td>
<td>___ : ___</td>
<td>___ : ___</td>
<td>___ : ___</td>
</tr>
</tbody>
</table>

## DISEASES: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

- NT Alternaria macrospora
- NT Anthracnose
- NT Ascochyta Blight
- NT Bacterial Blight (Race 1)
- NT Bacterial Blight (Race 2)
- NT Bacterial Blight (Race _____________)
- NT Fusarium Wilt
- NT Phymatotrichum Root Rot
- NT Pythium (specify Species) _____________
- NT Rhizoctonia solani
- NT Southwestern Cotton Rust
- NT Thielaviopsis basicola
14. NEMATODES, INSECTS AND PESTS: (NT = Not Tested, S = Susceptible, MS = Moderately Susceptible, MR = Moderately Resistant, R = Resistant)

<table>
<thead>
<tr>
<th>NT</th>
<th>Root-Knot Nematode</th>
<th>NT</th>
<th>Reniform Nematode</th>
</tr>
</thead>
<tbody>
<tr>
<td>NT</td>
<td>Boll Weevil</td>
<td>NT</td>
<td>Grasshopper (specify species)</td>
</tr>
<tr>
<td>MR</td>
<td>Bollworm</td>
<td>NT</td>
<td>Lygus (specify species)</td>
</tr>
<tr>
<td>NT</td>
<td>Cotton Aphid</td>
<td>R</td>
<td>Pink Bollworm</td>
</tr>
<tr>
<td>NT</td>
<td>Cotton Fleahopper</td>
<td>NT</td>
<td>Spider Mite (specify species)</td>
</tr>
<tr>
<td>NT</td>
<td>Cotton Leafworm</td>
<td>NT</td>
<td>Stink Bug (specify species)</td>
</tr>
<tr>
<td>NT</td>
<td>Cutworm (specify species)</td>
<td>NT</td>
<td>Thrips (specify species)</td>
</tr>
<tr>
<td>NT</td>
<td>Fall Armyworm</td>
<td>R</td>
<td>Tobacco Bud Worm</td>
</tr>
<tr>
<td></td>
<td>Other (specify)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. COMMENTS: Present any additional information that cannot adequately be described in 1 through 13 which significantly distinguishes your variety.
1. NAME OF APPLICANT(S)

Louisiana Agricultural Experiment Station

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

Hx 6250
PM 6250

3. VARIETY NAME

PM 1220 BG

4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)

P.O. Box 25055
Baton Rouge, LA 70894-5055

5. TELEPHONE (include area code)

(504) 388-4181

6. FAX (include area code)

(504) 388-6032

7. PVPO NUMBER

9700124

8. Does the applicant own all rights to the variety? Mark an "X" in appropriate block. If no, please explain.

☑YES ☐NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company?

If no, give name of country

☑YES ☐NO

10. Is the applicant the original breeder? If no, please answer the following:

a. If original rights to variety were owned by individual(s):

Is (are) the original breeder(s) a U.S. national(s)? If no, give name of country

☐YES ☐NO

b. If original rights to variety were owned by a company:

☐YES ☐NO

11. Additional explanation on ownership (If needed, use reverse for extra space):

Paymaster Technology Corp., 2476 Hwy 130 E, Stuttgart, AR 72160 has exclusive marketing and development rights to this variety. See Exhibit "A" Origin and Breeding History.

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original breeder, both the original breeder and the applicant must meet one of the above criteria.

The original breeder may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

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