No. 7300013

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

~~ACCO Seed~~ Cargill Inc

Whereas, THERE HAS BEEN PRESENTED TO THE DDW 8/12/80

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

COTTON

'Paymaster Dwarf'

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* 28th *day of* June *in the year of our Lord one thousand nine hundred and* seventy-four

Attest:

S. 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: Paymaster Dwarf	2. KIND NAME: cotton	FOR OFFICIAL USE ONLY — PVPO NUMBER: 73013
3. GENUS AND SPECIES NAME: Gossypium hirsutum	4. FAMILY NAME *(Botanical)*: Malvaceae	FILING DATE: 10/10/72 — TIME: 1:15 A.M. P.M.
	5. DATE OF DETERMINATION: 1968	FEE RECEIVED: $150.00 BR — CHARGES
6. NAME OF APPLICANT(S): ~~ACCO SEED, Division of Anderson, Clayton & Co.~~ CARGILL INC	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*: ~~515 River Avenue, North Belmond, Iowa 50421~~ 15615 W. MC GINTY RD MINNETONKA MINN. 55343	8. TELEPHONE AREA CODE AND NUMBER: (515) 444-2291
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*: Corporation	10. STATE OF INCORPORATION: Delaware	11. DATE OF INCORPORATION: 1929

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

~~DR DELBERT HESS~~
~~ACCO SEED~~
~~P.O. Box 1630~~
~~PLAINVIEW, TEXAS 79072~~
~~806-293-2628~~

Dr. Harold Loden
ACCO SEED
515 River Avenue, North
Belmond, Iowa 50421

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
- [ ] 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 [X] 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 3, 1972
(DATE)

(SIGNATURE OF APPLICANT)
W. I. McKay, General Mgr. ACCO SEED

(DATE)

(SIGNATURE OF APPLICANT)

#73013

EXHIBIT A

Origin and Breeding History of the Variety

The breeding material, from which this cotton strain was developed, came from a thesis study of the late Larry Pool who worked under the direction of Dr. Luther Bird at Texas A & M University. Mr. Pool crossed a Paymaster breeding stock designated as Paymaster 105 to a breeding stock 146-21 UF 62, furnished by Dr. Bird, that was carrying the B4 gene for bacterial blight resistance. Dwarf or diminutive plants occurred as segregates from this cross.

letter 2/15/74

Plant-to-row selections were made for several generations with numerous characteristics being improved. Several of the most promising nursery rows were bulk harvested in 1967 for subsequent testing and multiplication. Most of the selection and testing of this material was done on the High Plains of Texas although the variety has been observed by breeders and cotton production specialists throughout the cotton belt.

Some variation in plant height, and stormproofness is evident in this variety especially when grown in sparse plant populations. Variation in density of gossypol glands may also be evident. Pollen color is mixed with some flowers having yellow pollen and some white.

Since the first yield tests of this variety were conducted in 1968, the characteristics exhibited have been essentially the same on all seed lots tested. Since the final form of the variety is a blend of several advance generation strains, the variety is genetically stable and with proper maintenance should remain so indefinitely.

#73013

EXHIBIT B

Botanical Description of the Variety

Paymaster Dwarf has a medium size seed (seed index of approximately 11.0 - 12.0); produces flowers earlier than most cotton varieties; has flowers with white petals and pollen that is either white or yellow; and possesses rather large bolls born close to the central axis.

The mature plant is considerably shorter than most varieties and when grown under rather dry hot conditions may not exceed 12 inches in height. Usual height is approximately 20 inches but under some conditions the plants may be considerably taller. Bolls are semi-stormproof. Lint percent is higher than most Plains cotton varieties both on a picked and stripped basis. Approximate fiber properties are: 2.5 span length, 15/16 to 1 inch; Pressley strength, 80,000 PSI; micronaire 4.0 or higher when mature.

In comparison with Paymaster 111, the Paymaster Dwarf is shorter in plant height; more closely fruited; earlier in days to flower; has smaller seed; and has shorter, weaker and finer fiber.

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-8
(10-2-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C
(Cotton)

OBJECTIVE DESCRIPTION OF VARIETY

COTTON (*GOSSYPIUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
ACCO SEED

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
515 River Ave. North
Belmond, Iowa 50421

FOR OFFICIAL USE ONLY

PVPO NUMBER
73013

VARIETY NAME OR TEMPORARY DESIGNATION
Paymaster Dwarf

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 or 9 or less.

1. SPECIES:

[1] 1 = GOSSYPIUM HIRSUTUM 2 = GOSSYPIUM BARBADENSE

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

[0] EASTERN [0] DELTA [0] CENTRAL [2] HIGH PLAINS [0] EL PASO AREA

[0] WESTERN LOW HOT VALLEYS [0] SAN JOAQUIN [ ] OTHER (*Specify*) _____

3. MATURITY (50% Open Boll):

[1][2] NO. OF DAYS *EARLIER* THAN ..... [4]
[ ][ ] NO. OF DAYS *LATER* THAN ..... [ ]

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1
7 = LANKART 57 8 = OTHER (*Specify*) _____

4. PLANT HABIT:

[3] 1 = SPREADING 2 = INTERMEDIATE 3 = COMPACT

[3] 1 = FOLIAGE SPARSE 2 = DENSE
3 = OTHER (*Specify*) intermediate

5. PLANT HEIGHT:

[1][5] CM. *SHORTER* THAN ..... [4]
[ ][ ] CM. *TALLER* THAN ..... [ ]

1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213
4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1
7 = LANKART 57 8 = OTHER (*Specify*) _____

6. MAIN STEM:

[3] 1 = LAX 2 = ASCENDING 3 = ERECT

[ ] CM. TO FIRST FRUITING BRANCH

[ ][ ] NO. OF NODES TO FIRST FRUITING BRANC (*from cotyledonary node*)

7. LEAF:

[ ][ ] CM. WIDTH OF WIDEST LEAVES AT MATURITY

8. LEAF PUBESCENSE:

[3] 1 = GLABROUS (HAIRS AS SPARSE AS D_2 SMOOTH)
2 = SMOOTH LEAF (DELTAPINE SMOOTH LEAF) 3 = PUBESCENT (STONEVILLE 213)
4 = HEAVY PUBESCENCE (H_1 OR H_2) 5 = OTHER (*Specify*) _____

9. LEAF COLOR:

[2] 1 = VIRESCENT YELLOW 2 = LIGHT GREEN 3 = DARK GREEN (*Acala-442*) 4 = RED
5 = OTHER (*Specify*) _____

10. LEAF TYPE:

[1] 1 = NORMAL 2 = OKRA 3 = SUPER OKRA 4 = OTHER (*Specify*) _____

11. FLOWER:

[2] 1 = NECTARILESS 2 = NECTARIED

[1] Petals: 1 = CREAM 2 = YELLOW

[1] Pollen: 1 = CREAM 2 = YELLOW occasional yellow

12. FRUITING BRANCH TYPE:

[2] 1 = CLUSTER 2 = SHORT 3 = NORMAL

[1] 1 = DETERMINATE 2 = INDETERMINATE

13. GOSSYPOL CONDITION:

[3] 1 = GLANDLESS 2 = REDUCED GLANDS 3 = NORMAL GLANDS
4 = OTHER (*Specify*) _____

[1] 1 = NORMAL BUD GOSSYPOL
2 = HIGH BUD GOSSYPOL

14. SEEDS:

[1][1.5] ± [2.0] SEED INDEX (*Fuzzy seed basis*)

[2] Seed Fuzz: 1 = SPARSE (GREGG 35) 2 = MODERATE (DPL-16)
3 = HEAVY (ACALA SJ-1) 4 = OTHER (*Specify*) 4

15. BOLLS:

[2] Locules: 1 = 3-4, 2 = 4-5

[ ] NO. SEEDS PER BOLL

[4 0 2] LINT PERCENT

[ ] MM. DIAMETER

[3] Pitted: 1 = NONE, 2 = FINELY, 3 = COURSELY

[5 5 0] GRAMS SEED COTTON PER BOLL

[2] Breadth: 1 = BROADER AT BASE, 2 = BROADER AT MIDDLE

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

[~~1~~ 3] Shape: 1 = LENGTH < WIDTH, 2 = LENGTH = WIDTH, 3 = LENGTH > WIDTH

2/26/74 2/15/74

16. BRACTEOLES:

[1] 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 . . . . . .

[ ] PERCENT *MORE* THAN . . . . . .

[ ] 1 = COKER 310 2 = DELTAPINE 16 3 = STONEVILLE 213 4 = PAYMASTER 111 5 = ACALA 1517-70 6 = ACALA SJ-1 7 = LANKART 57

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

[ ] SPAN LENGTH 50%

[1 0 0] SPAN LENGTH 2.5%

[ ] U.H.M. LENGTH

[ ] MEAN LENGTH

[3 2] STAPLE LENGTH 32nd INCHES

[ ] UNIFORMITY RATIO (MEAN/U.H.M.)

[ ] UNIFORMITY INDEX (50% SPAN/2.5% SPAN)

19. FIBER STRENGTH AND ELONGATION:

[8 0] 1,000 P.S.I.

[ ] ELONGATION E_1

[ ] STILOMETER T_0

[4 2 5] MICRONAIRE READING

[ ] YARN STRENGTH *(Give test method)* _____

[ ] STILOMETER T_1

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

[1] VERTICILLIUM WILT

[1] FUSARIUM WILT

[1] ROOT KNOT NEMATODE

[2] BACTERIAL BLIGHT *(Race 1)*

[2] BACTERIAL BLIGHT *(Race 2)*

[0] ASCOCHYTA BLIGHT

[1] 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.

ACCO SEED
DIVISION OF
ANDERSON, CLAYTON & CO.
SOUTHWESTERN OFFICE: P. O. BOX 1630 PLAINVIEW, TEXAS 79072 PHONE: (806) 652-3312

Plainview, Texas
February 15, 1974

Mr. J. J. Higgins, Examiner
Plant Variety Protection Office
USDA Grain Division
6525 Belcrest Road
Hyattsville, Maryland 20782

Dear Mr. Higgins:

Reference is made to your letter to Dr. Loden dated January 22, 1974 regarding cotton applications Nos. 73013 and 73015.

Our Company has decided not to market seed of Paymaster 1764 and consequently request that the application 73015 be withdrawn and that no further effort be made to place this variety under protection.

We do not have reliable data pertaining to yarn strengths since we rely mostly on fiber analyses instead of spinning tests in determining fiber characteristics.

Regarding novelty, Paymaster Dwarf does not "closely resemble" any commercially available variety that I am aware of. The bolls are approximately the same size as those of Paymaster 101-B and are similar in appearance. Although specific data are not available, the Paymaster Dwarf boll period (days from white flower to open boll) is relatively long, approaching that of the Western grown Acala cottons. This boll period may be as long as 65 days even under rather high temperatures. Although the boll period is long, the early blooming characteristic and the very rapid subsequent fruiting enables the variety to be earlier overall than the more conventional varieties. This combination makes Paymaster Dwarf "novel" more than any other specific characteristic.

In five replicated tests over a three-year period, the plant height of Paymaster Dwarf averaged 79.17 percent of the height of Paymaster 18, a variety considered to be about average for Plains varieties. Specific heights in these tests were: Paymaster 18, 23.04 inches and Paymaster Dwarf, 18.24 inches.

The frequencies of the variants mentioned in exhibit A have not been reliably measured.

The breeding stock from Dr. Bird's program that was used in creating Paymaster Dwarf had the designation 146-21 UF 62 and is referred to in most of our records as B4.

Reliable data regarding the 50 percent span length and uniformity index are not available since most fiber samples have not been analysed on a fibrograph.

The bolls of Paymaster Dwarf are slightly longer than they are wide. Please

"TODAY'S RESEARCH IS TOMORROW'S FUTURE"

change our Exhibit C to indicate this relationship.

ACCO SEED, a division of Anderson, Clayton and Company, is the owner of the variety, Paymaster Dwarf.

A check in the amount of $250.00 is enclosed for search or examination for the application 73013 pertaining to the Paymaster Dwarf variety.

Sincerely yours,

Delbert C. Hess, Director
Cotton Research

DCH/lc

enclosure

cc: Mr. W. I. McKay, Belmond, Iowa

EXHIBIT D
Data Indicative of Novelty

Paymaster Dwarf is novel in that the plants are shorter than other short growing stripper varieties such as Paymaster 18, Paymaster 101-B, Paymaster 202, Paymaster 111-A and Lankart 57. Paymaster Dwarf averaged 13 cm shorter than Paymaster 18 in replicated yield tests on the Plains of Texas in the years 1970 through 1973.

EXHIBIT D

Data Indicative of Novelty

The Paymaster Dwarf cotton variety is novel in that: (1) Plants are significantly shorter than other commercial cotton varieties and (2) Fruiting is early and the boll load is set relatively early.

#73013

EXHIBIT E

Statement of the Basis of Applicant's Ownership

All developmental work on this variety was done by breeders employed by the applicant, ACCO SEED, Division of Anderson, Clayton and Company.

This variety was approved for certification by the Texas Seed and Plant Board on July 13, 1972.