No. 7800019

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pfister Hybrid Corn 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, 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 (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'LP1 Cms Ht'

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

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* 31st *day of* July *in the year of our Lord one thousand nine hundred and* eighty.

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY LP1 Cms Ht	1b. VARIETY NAME LP1 Cms Ht	FOR OFFICIAL USE ONLY PV NUMBER 7800019
2. KIND NAME Corn	3. GENUS AND SPECIES NAME Zea Mays	FILING DATE 1-9-78 / TIME 10:00 (A.M.) P.M.
4. FAMILY NAME (BOTANICAL) Gramineae	5. DATE OF DETERMINATION July 1976	FEE RECEIVED $ 250.00 / $ ~~2,50.00~~ 250.00 / DATE 1-9-78 / 1-9-78 / 6-20-80
6. NAME OF APPLICANT(S) Pfister Hybrid Corn Company	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* P.O. Box 187 El Paso, Illinois 61738	8. TELEPHONE AREA CODE AND NUMBER 309/527-6000
9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)* Corporation	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION Delaware	11. DATE OF INCORPORATION June 19, 1944

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

Mr. Chas. W. Rummler/Rummler and Snow/7 South Dearborn Street/
Chicago, Illinois 60603

13. **CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:**

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

R/S

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). (If "Yes," answer 14B and 14C below.)* [ ] YES [X] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? [ ] YES [X] NO

14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) 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.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) 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 Act.

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

Pfister Hybrid Corn Company
(SIGNATURE OF APPLICANT)

(DATE)

3-24-78
(DATE)

By: [signature]
(SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

INSTRUCTIONS

GENERAL: Send an original copy of the application and exhibits, at least 2,500 viable seeds, and $500 fee ($250 filing fee and $250 examination fee) to U.S. Dept. of Agriculture, Agricultural Marketing Service, Livestock, Poultry, Grain and Seed Division, Plant Variety Protection Office, National Agricultural Library Building, Beltsville, Maryland 20705. (See section 180.175 of the Regulations and Rules of Practice.) Retain one copy for your files. All items on the face of the form are self-explanatory unless noted below.

ITEM

5 Give the date the applicant determined that he had a new variety based on (1) the definition in section 41(a) of the Act and (2) the date a decision was made to increase the seed.

13a Give: (1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method; (2) the details of subsequent stages of selection and multiplication; (3) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified and (4) evidence of uniformity and stability.

13b Give a summary statement of the variety's novelty. Clearly state how this novel variety may be distinguished from all other varieties in the same crop. If the new variety most closely resembles one or a group of related varieties: (1) identify these varieties and state all differences objectively; (2) attach statistical data for characters expressed numerically and demonstrate that these differences are significant; and (3) submit, if helpful, seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty.

13c Fill in the Exhibit C, Objective Description form, for all characteristics for which you have adequate data.

13d Describe any additional characteristics that are not described, or whose description cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the description of characteristics that are difficult to describe, such as, plant habit, plant color, disease resistance, etc.

14a If "YES" is specified (seed of this variety be sold by variety name only as a class of certified seed) the applicant may NOT reverse his affirmative decision after the variety has either been sold and so labeled, his decision published, or the certificate has been issued. However, if the applicant specified "NO," he may change his choice. (See section 180.16 of the Regulations and Rules of Practice.)

15a See section 42 of the Plant Variety Protection Act and section 180.7 of the Regulations and Rules of Practice.

7800019

EXHIBIT A

(Revision One)

Origin and Breeding History of the Variety

1. Origin:

LP1 Cms Ht originated in Illinois, U.S.A., as a breeding developement of Pfister Hybrid Corn Company. Work was performed by Pfister Research Agronomist James Bryant, under direction of Company Research Director. Work is fully documented in permanent records of Company.

2. Breeding History:

LP1 Cms Ht was developed from A635 Cms Ht X A632 Ht with backcrossing commencing in 1970. Sterile plants of this population were subjected to several cycles of backcrossing utilizing a specific A632 Ht selection, (which we designate LP1 NR Ht) as recurrent parent.

3. Maintenance of LP1 Cms Ht:

Propagation of LP1 Cms Ht is carried out by maintenance with inbred line LP1 NR Ht, which is a genetically uniform homozygous line that has the same nuclear constitution as LP1 Cms Ht with exception of cytoplasm. LP1 Cms Ht is thus a genetically uniform inbred line that is maintained by continued inbreeding with LP1 NR Ht.

4. Proof of Cytoplasm:

LP1 Cms Ht is "C" cytoplasm since it is restored by both Oh43 and A619.

5. Inbred Variety Description:

LP1 Cms Ht is a phenotypically uniform inbred. It is genetically homozygous with fixed characteristics typical of A632, and LP1 NR Ht. It is an inbred that is sterile under replicated tests, therby demonstrating its stability.

6. Disease Resistance Traits:

LP1 Cms Ht possesses the homozygous dominate resistant gene, Ht, for Northern Corn Leaf Blight, incited by Helminthosporium Turcicum.

Application No. 7800019

Supplement to Exhibit 13a
LP1 Cms Ht$_1$ Dent Corn Inbred
RJS
January 3, 1979

RJS.

The LP1 Cms Ht$_1$ dent corn inbred is stable genetically. No variants have been noted in the line since its first use in test crosses in 1976-77 and subsequent pilot and commercial production. Additional evidence of its uniformity is the continuing backcrossing by the homozygous maintainer line (LP1 NR Ht$_1$).
RJS

Exhibit 13A

Origin and breeding history of LP1 Cms Ht_2 a corn dent inbred

The following is a chronological history of the breeding of the line LP1 Cms Ht_2. Work on this development was conducted by Pfister Hybrid Corn Company, El Paso, Illinois, 61738, in three locations: El Paso, Illinois; Homestead, Florida; and Kaunakakai, Molokai, Hawaii.

Winter 1970-71 Florida: A cross was made between 689ms(WF9CxB14A) female parent and 118 male parent. The 689ms(WF9CxB14A) is part of the Jack Becket collections released from the public sector. Sterile plants were selected as the female parent. Inbred 118 is a private selection of a B14A related line. (Nursery Book - Series 4, Row 15, Page 8)

Summer 1971 El Paso: Pollen parent 181 was crossed onto (689msx118) ear parent selecting for sterility. Inbred 181 is a private selection of a A635 related line with Helminthosporium turcicum resistance. (Nursery Book - Series 2, Row 4, Page 48)

Winter 1971-72 Florida: Pollen parent 181 was crossed onto (689msx118)181) ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Series 3, Row 84, Page 4)

Summer 1972 El Paso: Pollen parent 181 was crossed onto 689msx118)181)BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Series 3, Row 58, Page 76)

Winter 1972-73 Florida: Pollen parent 181 was crossed onto 689msx118)181)2BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Series 8, Row 20, Page 45)

Summer 1973 El Paso: Pollen parent 181 was crossed onto 689msx118)181)2BC ear parent selecting for sterility and other desirable characteristics. (Seed set from winter 1972-73 Florida material was poor. Summer 1972 generation material was used as ear parent seed.) (Nursery Book - Row 2627, Page 3)

4

7800019

Winter 1973-74 1st planting Hawaii: Pollen parent 181 was crossed onto 689msx118)181)3BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Row 1288, Page 83)

Winter 1973-74 2nd planting Hawaii: Pollen parent 181 was crossed onto 689msx118)181-4BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Row 474, Page 123)

Summer 1974 El Paso: Pollen parent 181 was crossed onto 689msx118)181-5BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Rows 6766 to 6785, Pages 93-94)

Winter 1974-75 Florida: Pollen parent 181 was crossed onto 689msx118)181-5BC ear parent selecting for sterility and other desirable agronomic characteristics. (1974 was a very dry crop year with poor seed set. Winter 1973-74 2nd planting Hawaii generation material was used as ear parent seed.) (Nursery Book - Rows 782-801, Page 31)

Summer 1975 El Paso: Pollen Parent $182Ht_1$-Blk-1 was crossed onto 689msx118)181-6BC ear parent selecting for sterility and other desirable agronomic characteristics. (50 plant number selfs and crosses were made.) $182Ht_1$-Blk-1 is a private selection related to A632 with Helminthosporium turcicum resistance. (Nursery Book - ear parent rows 2056-2065, pollen parent rows 2101-2105, Pages 67-68)

Winter 1975-76 1st planting Hawaii: Pollen parent $182Ht_1$-Blk-1)PN042 was crossed onto 689msx118)181-6BC)$182Ht_1$-Blk-1 ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Row 1218, Page 41)

Winter 1975-76 2nd planting Hawaii: Pollen parent $182Ht_1$-Blk-1-PN042-0 was crossed onto 689msx118)181-6BC)$182Ht_1$-Blk-1)BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Row 1339, Page 45)

5

7800019

Summer 1976 El Paso: Pollen parent 182Ht$_1$-Blk-1-PN042-0 was crossed onto 689msx118)181-6BC)182Ht$_1$-Blk-1)BC ear parent selecting for sterility and other desirable agronomic characteristics. (Due to poor location in winter nursery, observations could not be made and this selection was not worked. We dropped back to previous generation stocks for seed parent.) (Nursery Book - Row 9705, Page 328)

Winter 1976-77 Hawaii: Pollen parent 182Ht$_1$-Blk-1-PN042-0^2 was crossed onto 689msx118)181-6BC)182Ht$_1$-Blk-1)2BC ear parent selecting for sterility and other desirable agronomic characteristics. (34 sets of PN0 crosses were observed for sterility - all were 100% sterile.) Hybrid test crosses were made for checking yield potential. (Nursery Book - Rows 137 to 203, Pages 5 to 7)

Summer 1977 El Paso: Pollen parent 182Ht$_1$-Blk-1-PN042-0^3 was crossed onto 689msx118)181-6BC)182Ht$_1$-Blk-1)3BC ear parent selecting for sterility and other desirable agronomic characteristics. (Nursery Book - Rows 6752 to 6823, Pages 57-59)

Winter 1977-78 Hawaii: Pollen parent 182Ht$_1$-Blk-1-PN042-0^4 was crossed onto 689msx118)181-6BC)182Ht$_1$-Blk-1)4BC ear parent selecting for sterility and other desirable agronomic characteristics. At this stage, both the male sterile ear parent and the pollen parent maintainer were crossed onto yield tester lines to check yield potential and other agronomic traits. LP1 Cms Ht$_1$ seed stocks were increased in foundation fields during the winter season. (Nursery Book - Rows 1589-1608, Pages 54-55)

Summer 1978 El Paso: Pollen parent 182Ht$_1$-Blk-1-PN042-0^5 (LP1 NR Ht$_{RfS}$) was crossed onto 689msx118)181-6BC)182Ht$_1$-Blk-1)5BC (LP1 Cms Ht$_{RfS}$) ear parent. Selection for sterility and favorable agronomic traits will be continued in future generations. LP1 Cms Ht$_{RfS}$ seed stocks were increased in foundation fields during 1978. (Nursery Book - Rows 11104-11122, Page 94)

Attached:

1. Facsimile reproduction of the Nursery Book pages mentioned above.

6

7800019

PV No. 7800019
Corn
'LP1 Cms Ht'

Exhibit B (Revised)

'LP1 Cms Ht' is most similar to 'A632' and 'LP1 NR Ht'. 'LP1 Cms Ht' is resistant to Helminthosporium turcicum, whereas 'A632' is susceptable. 'LP1 Cms Ht' is 100% sterile (non-viable pollen) when maintained by 'LP1 NR Ht'. 'LP1 Cms Ht' is partially or totally restored by 'A632' or other 'A632' types.

Signature and Date Daniel E Pfister 2-16-79
Applicant

LPl Cms Ht

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-28
(2-15-74)

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

EXHIBIT C
(Corn)

OBJECTIVE DESCRIPTION OF VARIETY
CORN *(ZEA MAYS)*

NAME OF APPLICANT(S)
PFISTER HYBRID CORN COMPANY

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
P.O. Box 187
El Paso, Illinois 61738

FOR OFFICIAL USE ONLY

PVPO NUMBER
7800019

VARIETY NAME OR TEMPORARY DESIGNATION
LPl Cms Ht

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. TYPE:

[2] 1 = SWEET 2 = DENT 3 = FLINT 4 = FLOUR 5 = POP 6 = ORNAMENTAL

2. REGION WHERE BEST ADAPTED IN THE U.S.A.:

[2] 1 = NORTHWEST 2 = NORTHCENTRAL 3 = NORTHEAST 4 = SOUTHEAST
5 = SOUTHCENTRAL 6 = SOUTHWEST 7 = MOST REGIONS

3. MATURITY (In Region of Best Adaptability):

(Under "omments" (pg. 3) state how heat units were calculated)

[6][9] DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK — [1][5][2][0] HEAT UNITS

[N][A] DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY — [--][--][--][--] HEAT UNITS

[5][6] DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE — [1][1][7][0] HEAT UNITS

4. PLANT:

[2][1][5] CM. HEIGHT (To tassel tip)

[1][0][8] CM. EAR HEIGHT (To base of top ear)

[1][2] CM. LENGTH OF TOP EAR INTERNODE

Number of Tillers:

[2] 1 = NONE 2 = 1–2 3 = 2–3 4 = > 3

Number of Ears Per Stalk:

[2] 1 = SINGLE 2 = SLIGHT TWO-EAR TENDENCY
3 = STRONG TWO-EAR TENDENCY 4 = THREE-EAR TENDENCY

Cytoplasm Type:

[4] 1 = NORMAL 2 = "T" 3 = "S" 4 = "C" 5 = OTHER (Specify) _____

5. LEAF (Field Corn Inbred Examples Given):

Color:

[3] 1 = LIGHT GREEN (HY) 2 = MEDIUM GREEN (WF9) 3 = DARK GREEN (B14) 4 = VERY DARK GREEN (K166)

Angle from Stalk (Upper half):

[2] 1 = < 30° 2 = 30–60° 3 = > 60°

Sheath Pubscence:

[1] 1 = LIGHT (W22) 2 = MEDIUM (WF9)
3 = HEAVY (OH26)

Marginal Waves:

[2] 1 = NONE (HY) 2 = FEW (WF9) 3 = MANY (OH7L)

Longitudinal Creases:

[1] 1 = ABSENT (OH51) 2 = FEW (OH56A)
3 = MANY (PA11)

Width:

[1][0] CM. WIDEST POINT OF EAR NODE LEAF

Length:

[0][7][6] CM. EAR NODE LEAF

[1][4] NUMBER OF LEAVES PER MATURE PLANT

8

7800019

6. TASSEL:

[1 0] NUMBER OF LATERAL BRANCHES

Branch Angle from Central Spike:

[1] 1 = < 30° 2 = 30–40° 3 = > 45°

Penduncle Length:

[0 2] CM. FROM TOP LEAF TO BASAL BRANCHES

Pollen Shed:

[0] 1 = LIGHT (WF9) 2 = MEDIUM 3 = HEAVY(KY21) 0 = Male Sterile

[N.A] Anther Color: 1 = YELLOW 2 = PINK 3 = RED 4 = PURPLE 5 = GREEN

[6] Glume Color: 6 = OTHER (Specify) Initially green; later reddish

Pollen Restoration for Cytoplasms (o = Not Tested, 1 = Partial, 2 = Good)

[ ] "T" [ ] "S" [ ] "C" [ ] OTHER (Specify Cytoplasm and degrees of restoration) N.A.
(100% Sterile "C" Cytoplasm)

7. EAR (Husked Ear Data Except When Stated Otherwise):

[1 4] CM LENGTH [4 0] MM. MID-POINT DIAMETER [1 2 5] GM. WEIGHT

Kernel Rows:

[2] 1 = INDISTINCT 2 = DISTINCT [1 4] NUMBER

[1] 1 = STRAIGHT 2 = SLIGHTLY CURVED 3 = SPIRAL

Silk Color (Exposed at Silking Stage):

[1] 1 = GREEN 2 = PINK 3 = SALMON 4 = RED

Husk Color:

[2] FRESH
[6] DRY

1 = LIGHT GREEN 2 = DARK GREEN 3 = PINK
4 = RED 5 = PURPLE 6 = BUFF

Husk Extention: (Harvest Stage)

[3] 1 = SHORT (Ears Exposed) 2 = MEDIUM (Barely Covering Ear)
3 = LONG (8–10CM Beyond Ear Tip)
4 = VERY LONG (> 10 CM)

Husk Leaf:

[2] 1 = SHORT (< 8 CM) 2 = MEDIUM (8–15 CM)
3 = LONG (> 15 CM)

Shank:

[1 6] CM LONG [8] NO. OF INTERNODES

Position at Dry Husk Stage:

[1] 1 = UPRIGHT 2 = HORIZONTAL 3 = PENDENT

Taper:

[1] 1 = SLIGHT 2 = AVERAGE 3 = EXTREME

Drying Time (Unhusked Ear):

[2] 1 = SLOW 2 = AVERAGE 3 = FAST

8. KERNEL (Dried):

Size (From Ear Mid-Point):

[1 0] MM LONG [0 8] MM. WIDE [0 5] MM. THICK

Shape Grade (% Rounds)

[3] 1 = < 20 2 = 20–40 3 = 40–60 4 = 60–80 5 = > 80

8. KERNEL (Dried):

[1] **Pericarp Color:** 1 = COLORLESS 2 = RED-WHITE 3 = TAN 4 = BRONZE 5 = BROWN 6 = LIGHT RED 7 = CHERRY RED 8 = VARIEGATED (Describe) _____

[1] **Aleurone Color:** 1 = HOMOZYGOUS 2 = SEGREGATING (Describe) _____

[10] 1 = WHITE 2 = PINK 3 = TAN 4 = BROWN 5 = BRONZE 6 = RED 7 = PURPLE 8 = PALE PURPLE 9 = VARIEGATED (Describe) 10 = Yellow

[2] **Endosperm Color:** 1 = WHITE 2 = PALE YELLOW 3 = YELLOW 4 = PINK-ORANGE 5 = WHITE CAP.

Endosperm Type:

[3] 1 = SWEET (su1) 2 = EXTRA SWEET (sh2) 3 = NORMAL STARCH 4 = HIGH AMYLOSE STARCH 5 = WAXY STARCH 6 = HIGH PROTEIN 7 = HIGH LYSINE 8 = OTHER (Specify) _____

[2 6] GM. WEIGHT /100 SEEDS (Unsized Sample)

9. COB:

[2 5] MM. DIAMETER AT MID-POINT

Strength:

[2] 1 = WEAK 2 = STRONG

Color:

[3] 1 = WHITE 2 = PINK 3 = RED 4 = BROWN 5 = VARIEGATED 6 OTHER (Specify) _____

10. DISEASE RESISTANCE (0 = Not Tested, 1 = Susceptible, 2 = Resistant): Based on A632 data-more data in 1978.

[2]	STALK ROT (Diplodia)	[1]	STALK ROT (Fusarium)	[1]	STALK ROT (Gibberella)
[2]	NORTHERN LEAF BLIGHT	[1]	SOUTHERN LEAF BLIGHT (Race-0)	[0]	SMUT (S. reiliana)
[0]	SOUTHERN RUST	[2]	CORN SMUT (Ustilago maydis)	[0]	BACTERIAL WILT E. caratovora
[1]	BACTERIAL LEAF BLIGHT (E. stewartii)	[0]	MAIZE DWARF MOSAIC	[0]	STUNT (f. sp. chry.)
[2]	OTHER (Specify) S.C.L.B.-Race T				

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

[0]	CORNBORER	[0]	EARWORM	[0]	SAPBEETLE	[0]	APHID
[0]	ROOTWORM (Northern)	[0]	ROOTWORM (Western)				
[0]	ROOTWORM (Southern)	[ ]	OTHER (Specify) _____				

12. VARIETIES MOST CLOSELY RESEMBLING THAT SUBMITTED FOR THE CHARACTERS GIVEN:

CHARACTER	VARIETY	CHARACTER	VARIETY
Maturity	A632	Kernel Type	A632
Plant Type	A632	Quality (Edible)	----
Ear Type	A632	Usage	A632

REFERENCES:

U.S. Department Agriculture. Yearbook 1937.

Corn: Culture, Processing, Products. 1970 Avi Publishing Company, Westport, Connecticut. (Numerous (Authors)

Emerson, R.A., G.W. Beadle, and A.C. Fraser. A Summary of Linkage Studies in Maize.Cornell A.E.S., Mem. 180. 1935.

The Mutants of Maize. 1968. Crop Science Society of America. Madison, Wisconsin.

Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S. Bul. 831. 1959.

Butler, D.R. 1954 — A System for the Classification of Corn Inbred Lines — PhD. Thesis, Ohio State University.

COMMENTS: Heat Unit Formula = Accumulation of growing degree days (G.D.D.)based on formula:

$$G.D.D. = \frac{\text{Daily max. tem. } (86^{o}F) + \text{daily min. temp. } (50^{o})}{2} - 50^{o}F$$

Exhibit 13D

Additional Description of the Variety

LP1 Cms $Ht_{R/S}$ is a yellow dent corn inbred. The line is most similar to $182Ht_1$-Blk-1 in plant and ear type. Inbred $182Ht_1$-Blk-1 is a private A632 selection with Helminthosporium turcicum resistance. LP1 Cms $Ht_{R/S}$ is 15-20 cm. taller and 2% higher in moisture than $182Ht_1$-Blk-1. Hybrids with this line substituted for $182Ht_1$-Blk-1 are taller, later and show more uniformity and late health.

The stalk quality of LP1 Cms $Ht_{R/S}$ is slightly better than $182Ht_1$-Blk-1. The line will have 1-2 tillers under normal conditions. Fourteen leaves are normal and are oriented from 30-60 degrees from horizontal. The ear is medium in length with a slight taper; it is attached to a strong stalk of medium length and has a long husk extension. The kernels are arranged in 14 straight rows. The kernel is thick, yellow-orange with a pale yellow cap.

LP1 Cms $Ht_{R/S}$ is 100% male sterile and appears to be a "C" cytoplasm. The original source of sterility was WF9C x B14A from the Jack Becket collection. This inbred is fully restored by OH43 types. LP1 Cms $Ht_{R/S}$ is partially restored by all other inbreds with the exception of LP1 NR $Ht_{R/S}$. LP1 NR $Ht_{R/S}$ is a A632 related inbred.

11

7800019

Leese: 78 00019 'LP1 Cms Ht' corn

This is the first male steril inbred for issuance. Snyder has shown that the description fits the Federal Seed Act description of an inbred line which is considered a type of variety.

The seed has been reviewed and returned to storage.

Ken Evans 3/3/80

Lease:

Please note the letter we received on March 5, 1980 from the applicant & my answering March 12, 1980

RJS 3/12/80

4/29/80