No. 200000124

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Holden's Foundation Seeds L.L.C.

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 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 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, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN CING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY TION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN, FIELD

'LH279'

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 thirtieth day of January, in the year two thousand two.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secreta iculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy A 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 195

Application is required in order to determine if a plant variety prot certificate is to be issued (7 U.S.C. 2421). Information is held confid until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
HOLDEN'S FOUNDATION SEEDS L.L.C.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER
Ex4885

3. VARIETY NAME
LH279

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
503 S. MAPLEWOOD AVENUE
PO BOX 839
WILLIAMSBURG, IA 52361

5. TELEPHONE *(include area code)*
(319)668-1100

6. FAX *(include area code)*
(319)668-2453

FOR OFFICIAL USE ONLY
PVPO NUMBER 200000124
FILING DATE 1-7-00

7. GENUS AND SPECIES NAME
ZEA MAYS

8. FAMILY NAME *(Botanical)*
GRAMINEAE

9. CROP KIND NAME *(Common name)*
CORN, FIELD

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)* *(Common name)*
LIMITED LIABILITY COMPANY

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

12. DATE OF INCORPORATION
DECEMBER 1, 1997

FEES RECEIVED
FILING AND EXAMINATION FEE: $ 2450.00
DATE 1-7-00
CERTIFICATION FEE: $ 320.00
DATE 1/22/02

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
MR. MARK ARMSTRONG
HOLDEN'S FOUNDATION SEEDS L.L.C.
503 S. MAPLEWOOD AVENUE
PO BOX 839
WILLIAMSBURG, IA 52361

14. TELEPHONE *(include area code)*
(319)668-1100

15. FAX *(include area code)*
(319)668-2453

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. [X] Exhibit A. Origin and Breeding History of the Variety
b. [X] Exhibit B. Statement of Distinctness
c. [X] Exhibit C. Objective Description of the Variety
d. [X] Exhibit D. Additional Description of the Variety *(Optional)*
e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT 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)* [X] NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[ ] YES [ ] NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEE
[ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM 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)* [X] NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with 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 42, 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))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* GARY ARTHUR		NAME *(Please print or type)*	
CAPACITY OR TITLE PRESIDENT	DATE 1/3/00	CAPACITY OR TITLE	DATE

Origin and Breeding History of the Inbred

Exhibit A

LH279 was developed from the single cross of LH186 x LH169Ht by selfing and using the pedigree system of plant breeding. Yield, stalk quality, root quality, disease tolerance, late plant greenness, late plant intactness, ear retention, pollen shedding ability, silking ability and corn borer tolerance were the criteria used to determine the rows from which ears were selected during the development of LH279.

LH186 and LH169Ht the progenitors of LH279, are both proprietary field corn inbred lines of Holden's Foundation Seeds, L.L.C., of Williamsburg, Iowa. In 1993, Holden's Foundation Seeds, L.L.C., applied for plant variety protection of LH186 and LH169Ht. On February 28, 1995, LH186 was awarded certificate #9400037 and on August 31, 1995 LH169Ht was awarded certificate #9400035. LH186 and LH169Ht are also protected by a utility patent from the United States Patent Office. The utility patent for LH186 was issued on May 16, 1995, and is patent #5,416,262. LH169Ht is also protected by a utility patent from the United States Patent Office. The utility patent for LH169Ht was issued on July 25, 1995 and is patent #5,436,388.

Also enclosed is a copy of a letter from the USDA Seed Branch confirming that no other field corn inbreds have been named, 'LH279'.

On the following pages are a summary and description of the development of LH279. Also included are copies of pages from Holden's Foundation Seeds, L.L.C. nursery books. The rows associated with the development of LH279 have been highlighted.

LH279 has shown uniformity and stability for all traits described in Exhibit C. It has been self-pollinated and ear-rowed a sufficient number of generations, with careful attention to uniformity of plant type to ensure homozygosity and phenotypic stability. The line has been increased both by hand (Iowa 1997 and 1998) and sibbed in isolated production fields (Hawaii 1999 and Iowa 1999) with continued observations for uniformity. William D. Griffith, the originating plant breeder, has observed LH279 all four generations it has been increased. The line is stable, uniform and no variant traits have been observed or are anticipated in LH279.

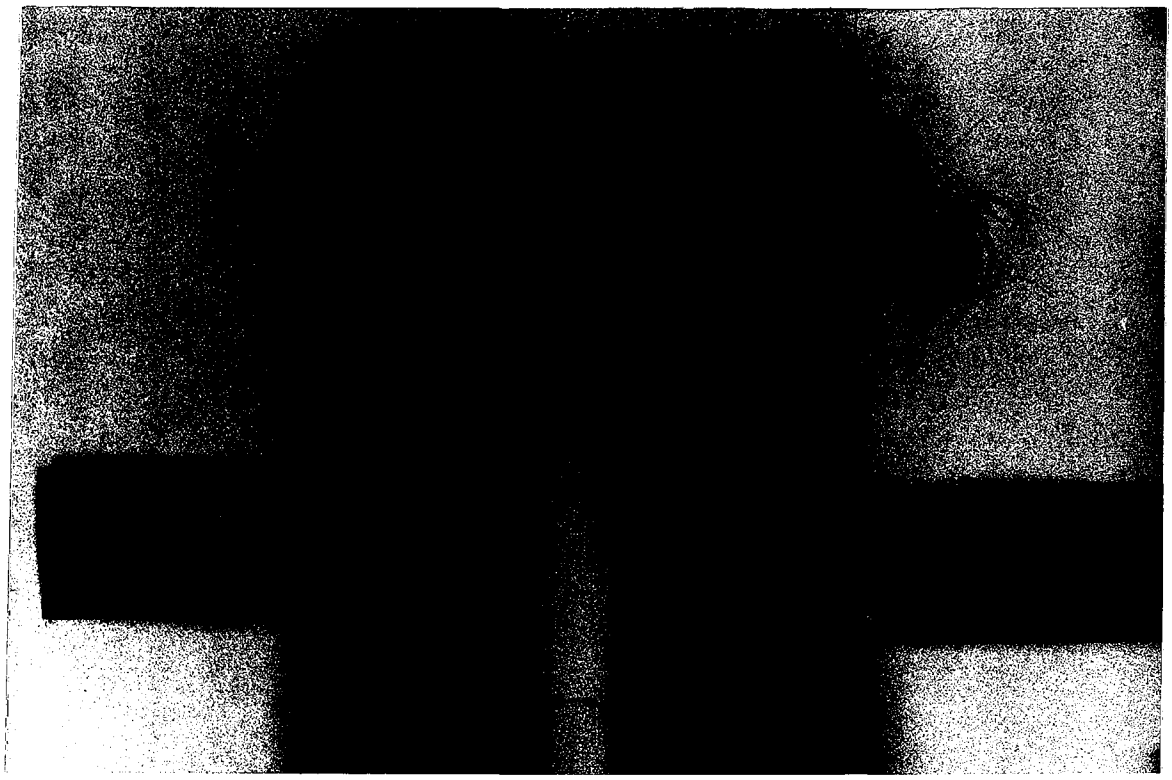
Origin and Breeding History of the Inbred
LH279=Ex4885=LH186 x LH169

Field/Row	Pedigree	Location	Year
Middle Feedlot	LH279	Iowa	1999
KA3B1	LH279	Hawaii	1999
10689-10698	Ex4885	Indiana	1998
21835	LH186 x LH169 @7	Iowa	1997
27896	LH186 x LH169 @6	Iowa	1996
28053	LH186 x LH169 @5	Hawaii	1996
13809	LH186 x LH169 @4	Indiana	1995
3367	LH186 x LH169 @3	Hawaii	1995
11299	LH186 x LH169 @2	Iowa	1994
20081	LH186 x LH169 @1	Hawaii	1994
44473	LH186 x LH169	Iowa	1993
34421 34418	LH186 LH169	Hawaii	1993

Novelty Statement

Exhibit B

LH279 is most similar to LH169Ht. However, the most distinguishing difference is silk color. The silk color of LH279 is red while the silk color of LH169Ht is light green. When using the Munsell Color Charts for Plant Tissues as a reference, the silk color of LH279 would be classified as 5R 4/6 while the silk color of LH169Ht would be classified as 2.5 GY 8/6. The silks of LH279 emerge from the ear shoot and are light green in color, but after exposure to the sun soon turn red at the tips. The silks of LH169Ht emerge from the ear shoot light green in color and remain light green even after exposure to the sun. This difference can be seen in the photograph below.



FORM SD-470-28
(9-1-92)

200000124

EXHIBIT C
(Corn; Maize)

United States Department of Agriculture, Agricultural Marketing Service
Science Division, Plant Variety Protection Office
National Agricultural Library Building, Room 500
Beltsville, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
CORN (*Zea mays* L.)

Name of Applicant(s)	Variety Seed Source	Variety Name or Temporary Designation
HOLDEN'S FOUNDATION SEEDS, L.L.C	IOWA 1998	LH279

Address (Street & No., or R.F.D. No., City, State, Zip Code and Country)	FOR OFFICIAL USE
503 SOUTH MAPLEWOOD AVE WILLIAMSBURG, IA 52361	PVPO Number

Place the appropriate number that describes the varietal characters typical of this inbred variety in the spaces below. Right justify whole numbers by adding leading zeroes if necessary. Completeness should be striven for to establish an adequate variety description. Traits designated by a '*' are considered necessary for an adequate variety description and must be completed.

COLOR CHOICES (Use in conjunction with Munsell color code to describe all color choices; describe #25 and #26 in Comments section):

01=Light Green	06=Pale Yellow	11=Pink	16=Pale Purple	21=Buff
02=Medium Green	07=Yellow	12=Light Red	17=Purple	22=Tan
03=Dark Green	08=Yellow-Orange	13=Cherry Red	18=Colorless	23=Brown
04=Very Dark Green	09=Salmon	14=Red	19=White	24=Bronze
05=Green-Yellow	10=Pink-Orange	15=Red & White	20=White Capped	25=Variegated (Describe)
				26=Other (Describe)

STANDARD INBRED CHOICES (Use the most similar (in background and maturity) of these to make comparisons based on grow-out trial data):

Yellow Dent Families:

Family	Members
B14	CM105, A632, B64, B68
B37	B37, B76, H84
B73	N192, A679, B73, NC268
C103	Mo17, Va102, Va35, A682
Oh43	A619, MS71, H99, Va26
WF9	W64A, A554, A654, Pa91

Yellow Dent (Unrelated): Co109, ND246, Oh7, T232, W117, W153R, W182BN

White Dent: CI66, H105, Ky228

Sweet Corn: C13, Iowa5125, P39, 2132

Popcorn: SG1533, 4722, HP301, HP7211

Pipecorn: Mo15W, Mo16W, Mo24W

1. TYPE: (describe intermediate types in Comments section)

* 2 1=Sweet 2=Dent 3=Flint 4=Flour 5=Pop 6=Ornamental 7=Pipecorn

Standard Inbred Name Mo17
2

2. REGION WHERE DEVELOPED IN THE U.S.A.:

* 2 1=Northwest 2=Northcentral 3=Northeast 4=Southeast 5=Southcentral 6=Southwest 7=Other _____

Standard Seed Source IOWA STATE UNIV.
5

3. MATURITY (In Region Best Adaptability: show Heat Unit formula in "Comments" section):

	DAYS	HEAT UNITS		DAYS	HEAT UNITS
*	61	11505	From emergence to 50% of plants in silk	76	15675
*	63	12055	From emergence to 50% of plants in pollen	72	14535
			From 10% to 90% pollen shed		
(*)			From 50% silk to optimum edible quality		
			From 50% silk to harvest at 25% moisture		

4. PLANT:

		Standard Deviation	Sample Size		Standard Deviation	Sample Size
*	155.6 cm Plant Height (to tassel tip)	8.96	50	2087	7.73	50
*	70.1 cm Ear Height (to base of top ear node)	5.81	50	947	7.12	50
	9.4 cm Length of Top Ear Internode	1.38	50	113	.82	50
	0.0 Average Number of Tillers	0.0	50	00	0.0	50
*	1.5 Average Number of Ears per Stalk	0.30	50	10	0.0	50
	1 Anthocyanin of Brace Roots: 1=Absent 2=Faint 3=Moderate 4=Dark			1		

5

Application Variety Data	Page 2		Standard Inbred Data		
5. LEAF:	Standard Deviation	Sample Size		Standard Deviation	Sample Siz
* 9.3 cm Width of Ear Node Leaf	.61	50	9 5	.60	50
* 69.8 cm Length of Ear Node Leaf	3.49	50	70.1	1.92	50
* 6 Number of leaves above top ear	.58	50	5	.31	50
26 degrees Leaf Angle (measure from 2nd leaf above ear at anthesis to stalk above leaf)	5.58	50	37	9.75	50
* 02 Leaf Color (Munsell code 5GY 4/4)			02 (Munsell code 7.5GY 3/4)		
4 Leaf Sheath Pubescence (Rate on scale from 1=none to 9=like peach fuzz)			2		
3 Marginal Waves (Rate on scale from 1=none to 9=many)			4		
3 Longitudinal Creases (Rate on scale from 1=none to 9=many)			3		
6. TASSEL:	Standard Deviation	Sample Size		Standard Deviation	Sample Size
* 6 Number of Primary Lateral Branches	2.50	50	7	1.39	50
18 Branch Angle from Central Spike	7.71	50	44	10.20	50
* 30.9 cm Tassel Length (from top leaf collar to tassel tip)	3.45	50	44.7	2.96	50
7 Pollen Shed (Rate on scale from 0=male sterile to 9=heavy shed)			7		
05 Anther Color (Munsell code 2.5GY 8/8)			07 (Munsell code 2.5GY 8/6)		
02 Glume Color (Munsell code 5GY 7/6)			02 (Munsell code 5GY 5/6)		
1 Bar Glumes (Glume Bands): 1=Absent 2=Present			1		
7a. EAR (Unhusked Data):			26 Olive Green ~~09~~ (Munsell code 5Y 7/4)		
* 13 Silk Color (3 days after emergence) (Munsell code 5R 4/6)					
01 Fresh Husk Color (25 days after 50% silking) (Munsell code 5GY 6/8)			01 (Munsell code 2.5GY 7/6)		
21 Dry Husk Color (65 days after 50% Silking) (Munsell code 7.5YR 7/4)			21 (Munsell code 7.5YR 7/4)		
* 1 Position of Ear at Dry Husk Stage: 1=Upright 2=Horizontal 3=Pendent			1		
5 Husk Tightness (Rate on scale from 1=very loose to 9=very tight)			5		
2 Husk Extension (at harvest): 1=Short (ears exposed) 2=Medium (<8 cm) 3=Long (8-10 cm beyond ear tip) 4=Very Long (>10 cm)			2		
7b. EAR (Husked Ear Data):	Standard Deviation	Sample Size		Standard Deviation	Sample Size
* 16.1 cm Ear Length	1.25	50	20.4	1.31	50
* 40.3 mm Ear Diameter at mid-point	1.90	50	38.5	1.70	50
103.2 gm Ear Weight	17.10	50	1180	16.58	50
* 14 Number of Kernel Rows	1.53	50	11	1.01	50
2 Kernel Rows: 1=Indistinct 2=Distinct			2		
1 Row Alignment: 1=Straight 2=Slightly Curved 3=Spiral			1		
11.2 cm Shank Length	1.81	50	13.4	1.84	50
2 Ear Taper: 1=Slight 2=Average 3=Extreme			2		
Application Variety Data			Standard Inbred Data		

Note: Use chart on first page to choose color codes for color traits.

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8. KERNEL (Dried):

	Application Variety Data	Standard Deviation	Sample Size	Standard Inbred Data	Standard Deviation	Sample Size
	10.8 mm Kernel Length	.60	50	11.3	.60	50
	8.7 mm Kernel Width	.60	50	9.5	.50	50
	5.2 mm Kernel Thickness	.80	50	5.0	.40	50
	43.4 % Round Kernels (Shape Grade)	4.76	15	78.1	2.76	15
	1 Aleurone Color Pattern: 1=Homozygous 2=Segregating			1		
(*)	19 Aleurone Color (Munsell code 2.5Y 8/2)			19 (Munsell code 2.5Y 8/2)		
*	07 Hard Endosperm Color (Munsell code 2.5Y 8/8)			08 (Munsell code 2.5Y 8/6)		
*	03 Endosperm Type: 1=Sweet (su1) 2=Extra Sweet (sh2) 3=Normal Starch 4=High Amylose Starch 5=Waxy Starch 6=High Protein 7=High Lysine 8=Super Sweet (se) 9=High Oil 10=Other			03		
	249 gm Weight per 100 Kernels (unsized sample)	.66	15	315	.61	15

9. COB:

	Application Variety Data	Standard Deviation	Sample Size	Standard Inbred Data	Standard Devaition	Sample Size
*	274 mm Cob Diameter at mid-point	1.30	50	27.1	1.30	50
	19 Cob Color (Munsell code 2.5Y 8/2)			14 (Munsell code 10R 5/6)		

10. DISEASE RESISTANCE (Rate from 1 (most susceptible) to 9 (most resistant): leave blank if not tested; leave Race or Strain Options blank if polygenic):

	Application Variety Data	Standard Inbred Data
A. Leaf Blights, Wilts, and Local Infection Diseases		
	Anthracnose Leaf Blight (*Colletotrichum graminicola*)	
	Common Rust (*Puccinia sorghi*)	
	Common Smut (*Ustilago maydis*)	
8	Eyespot (*Kabatiella zeae*)	
	Goss's Wilt (*Clavibacter michiganense* spp. *nebraskense*)	
	Gray Leaf Spot (*Cercospora zeae-maydis*)	
9	Helminthosporium Leaf Spot (*Bipolaris zeicola*) Race 3	8 Race 3
8	Northern Leaf Blight (*Exserohilum turcicum*) Race 1	8 Race 1
	Southern Leaf Blight (*Bipolaris maydis*) Race ____	Race ____
	Southern Rust (*Puccinia polysora*)	
	Stewart's Wilt (*Erwinia stewartii*)	
	Other (Specify)	
B. Systemic Diseases		
	Corn Lethal Necrosis (MCMV and MDMV)	
	Head Smut (*Sphacelotheca reiliana*)	
	Maize Chlorotic Dwarf Virus (MCDV)	
	Maize Chlorotic Mottle Virus (MCMV)	
	Maize Dwarf Mosaic Virus (MDMV) Strain ____	Strain ____
	Sorghum Downy Mildew of Corn (*Peronosclerospora sorghi*)	
	Other (Specify)	
C. Stalk Rots		
	Anthracnose Stalk Rot (*Colletotrichum graminicola*)	
	Diplodia Stalk Rot (*Stenocarpella maydis*)	
	Fusarium Stalk Rot (*Fusarium moniliforme*)	
	Gibberella Stalk Rot (*Gibberella zeae*)	
	Other (Specify)	
D. Ear and Kernel Rots		
	Aspergillus Ear and Kernel Rot (*Aspergillus flavus*)	
	Diplodia Ear Rot (*Stenocarpella maydis*)	
	Fusarium Ear and Kernel Rot (*Fusarium moniliforme*)	
	Gibberella Ear Rot (*Gibberella zeae*)	
	Other (Specify)	

Note: Use chart on first page to choose color codes for color traits.

Standard Inbred Data

200000124

11. INSECT RESISTANCE (Rate from 1 (most susceptible) to 9 (most resistant); leave blank if not tested):

	Standard Deviation	Sample Size		Standard Deviation	Sample Size
__ Banks Grass Mite (*Oligonychus pratensis*)			__		
Corn Earworm (*Helicoverpa zea*)					
__ Leaf-Feeding			__		
Silk Feeding :					
__ __ __.__ mg larval wt.			__ __ __.__		
__ Ear Damage			__		
__ Corn Leaf Aphid (*Rhopalosiphum maidis*)			__		
__ Corn Sap Beetle (*Carpophilus dimidiatus*)			__		
European Corn Borer (*Ostrinia nubilalis*)					
__ 1st Generation (Typically Whorl Leaf Feeding)			__		
__ 2nd Generation (Typically Leaf Sheath-Collar Feeding)					
Stalk Tunneling :					
__ __ __.__ cm tunneled/plant			__ __ __.__		
Fall Armyworm (*Spodoptera frugiperda*)					
__ Leaf-Feeding			__		
Silk-Feeding :					
__ __ __.__ mg larval wt.			__ __ __.__		
__ Maize Weevil (*Sitophilus zeamaize*)			__		
__ Northern Rootworm (*Diabrotica barberi*)			__		
__ Southern Rootworm (*Diabrotica undecimpunctata*)			__		
Southwestern Corn Borer (*Diatraea grandiosella*)					
__ Leaf Feeding			__		
Stalk Tunneling :					
__ __ __.__ cm tunneled/plant			__ __ __.__		
__ Two-spotted Spider Mite (*Tetranychus urticae*)			__		
__ Western Rootworm (*Diabrotica virgifera virgifera*)			__		
__ Other (Specify) _____			__ _____		

12. AGRONOMIC TRAITS:

8 Stay Green (at 65 days after anthesis) (Rate on a scale from 1=worst to 9=excellent.)	7
__ 0.0 % Dropped Ears (at 65 days after anthesis)	__ 0.0
__ 0.0 % Pre-anthesis Brittle Snapping	__ 0.0
__ 0.0 % Pre-anthesis Root Lodging	__ 0.0
__ 0.0 % Post-anthesis Root Lodging (at 65 days after anthesis)	__ 0.0
__ __ __.__ Kg/ha Yield of Inbred Per Se (at 12-13% grain moisture)	__ __ __.__

13. MOLECULAR MARKERS: (0=data unavailable; 1=data available but not supplied; 2=data supplied)

0 Isozymes 0 RFLP's 0 RAPD's

REFERENCES:

Butler, D.R. 1954. A System for the Classification of Corn Inbred Lines. PhD Thesis, Ohio State University.
Emerson, R.A., G.W. Beadle, and A.C. Fraser. 1935. A Summary of Linkage Studies in Maize. Cornell A.E.S., Mem. 180.
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Jugenheimer, R.W. 1976. Corn: Improvement, Seed Production, and Uses. John Wiley & Sons, New York.
McGee, D.C. 1988. Maize Diseases. APS Press, St. Paul, MN. 150 pp.
Munsell Color Chart for Plant Tissues. Macbeth, P.O. Box 230, Newburgh, N.Y. 12551-0230
The Mutants of Maize. 1968. Crop Science Society of America, Madison, WI.
Shurtleff, M.C. 1980. Compendium of Corn Diseases. APS Press, St. Paul, MN. 105 pp.
Sprague, G.F., and J.W. Dudley (Editors). 1988. Corn and Corn Improvement, Third Edition. Agronomy Monograph 18. ASA, CSSA, SSSA, Madison, WI.
Stringfield, G.H. Maize Inbred Lines of Ohio. Ohio A.E.S., Bul. 831. 1959.
U.S. Department of Agriculture. 1936, 1937. Yearbook.

COMMENTS (eg. state how heat units were calculated, standard inbred seed source, and/or where data was collected. Continue in Exhibit D):

$$GDD = \frac{Tmax + Tmin}{2} - 50°F$$

$Tmax \leq 86°F$

$Tmin \geq 50°F$

STANDARD SEED SOURCE: IOWA STATE UNIVERSITY DATA COLLECTED @ WILLIAMSBURG, IA 1999

Additional Description of the Inbred

Exhibit D

LH279 is a medium season field corn inbred that flowers 2 days earlier than LH185. In seed production, LH279 is not suitable to be used as a seed parent, but appears to be a good pollinator.

In hybrid combinations, LH279 contributes a unique, robust plant style and a consistent long ear that results in outstanding yield potential. The kernel depth of LH279 hybrids is excellent. Hybrid maturity is similar to comparable LH172 crosses, but plant stature is larger.

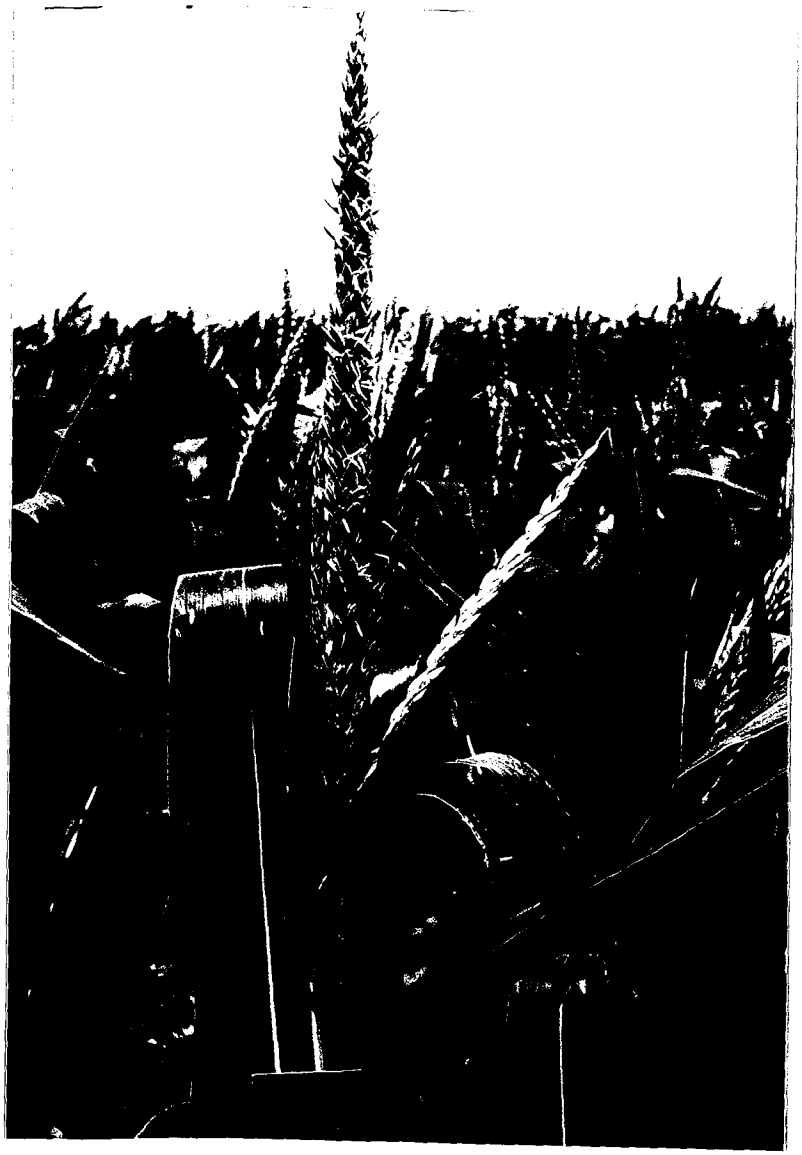
Notes from

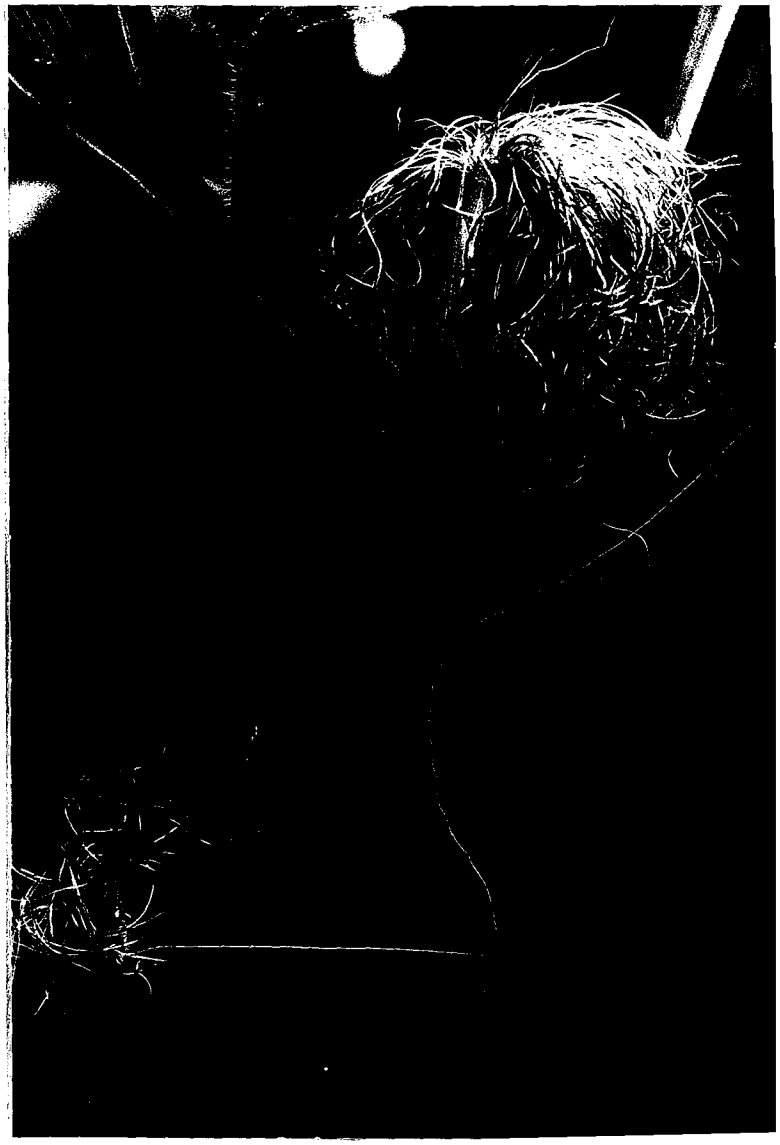
Exhibit C: The main silk body of Mo17 is green, but as the silk hairs are exposed to sunlight they turn lighter and are more 'olive green' in color. Please change the verbal silk color of Mo17 from '9' (salmon) to '26' with the description being 'olive green'. On occasion, it is difficult for me to describe what I observe in the field and match it to a color chip in the book. I'm sometimes puzzled with what I observe and the resulting color match and this is one of those times.

After some thought and evaluation, I have concluded that the reason for the large standard deviations in my statistical analysis is poor experimental design. I neglected to take into account the effect the end plants in the row have in my analysis. One to sometimes four plants at the end of each row have a dramatic effect on the standard deviation of the individual plants being evaluated. My understanding of this effect on this statistical function and its contribution to variance components was poor. To correct this flaw in my analysis, I will not allow my technician to measure these end plants. I will also more closely monitor the growth and uniformity of the individual plants in the row being evaluated.

JMS 11/20/01

P00000124





U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protectic certificate is to be issued (7 U.S.C. 2421). Information is held confidenti until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
HOLDEN'S FOUNDATION SEEDS L.L.C.	Ex4885	LH279

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
503 S. MAPLEWOOD AVENUE PO BOX 839 WILLIAMSBURG, IA 52361	(319)668-1100	(319)668-2453
	7. PVPO NUMBER 200000124	

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

9. Is the applicant *(individual or company)* a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country _____

10. Is the applicant the original owner? [X] YES [ ] NO ***If no, please answer the following:***

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO *If no, give name of country* _____

b. If original rights to variety were owned by a company, is the original owner(s) a U.S. based company?

[ ] YES [ ] NO *If no, give name of country* _____

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

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 nationa 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 owner, both the original owner and the applicant must meet one of the above criteria.

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

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OM control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this informatio collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gatherin and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in its programs on the basis of race, color, national origin, sex, religion, ag disability, political beliefs, and marital or familial status. (Not all prohibited bases apply to all programs.) Persons with disabilities who requi alternative means for communication of program information (braille, large print, audiotape, etc.) should contact the USDA Office of Communicatior at (202) 720-5881 (voice) or (202) 720-7808 (TDD).
To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.