No. 7600047

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Holden's Foundation Seeds, Inc.

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, [illegible]PORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT [illegible] THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. [illegible]NITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS [illegible] CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS [illegible] THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'LH1'

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* 19th *day of* July *in the year of our Lord one thousand nine hundred and* seventy-seven

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

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470
(12-15-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL 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	2. KIND NAME	FOR OFFICIAL USE ONLY
LH1	Yellow dent corn	PV NUMBER 7600047
3. GENUS AND SPECIES NAME	4. FAMILY NAME *(Botanical)*	FILING DATE 3-1-76 / TIME 10:00 A.M. P.M.
Zea mays	Gramineae	FEE RECEIVED $ 250.00 / BALANCE DUE $
	5. DATE OF DETERMINATION 1975	$ 250.00 / $
		$ 250.00 / $

6. NAME OF APPLICANT(S)	7. ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*	8. TELEPHONE AREA CODE AND NUMBER
Holden's Foundation Seeds, Inc.	P. O. Box 299 Williamsburg, Iowa 52361	319-668-1100

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: *(Corporation, partnership, association, etc.)*	10. STATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Iowa	1968

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

Mr. Gary Arthur
Holden's Foundation Seeds, Inc.
P. O. Box 299
Williamsburg, Iowa 52361

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, Botanical Description of the Variety

[X] 13C. Exhibit C, Objective Description of the Variety

[X] 13D. Exhibit D, Data Indicative of Novelty

[X] 13E. Exhibit E, Statement of the Basis of Applicant's Ownership

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.)* [X] YES [ ] NO

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

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [X] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

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.

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.

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

2-4-77
(DATE)

Gary S. Arthur
(SIGNATURE OF APPLICANT)

(DATE)

(SIGNATURE OF APPLICANT)

00001

Exhibit 13a Origin and breeding history of LH-1 a dent corn inbred.

The following is a chronological history of the breeding of the line LH-1. All work occurred at the Holden's Foundation Seed, Inc., Williamsburg, Iowa 52361

1965. A single cross was made between B37 female parent and 644 male parent. The B37 is a well-known inbred line developed in the public sector. 644 is a private line of Holden's not related to any line.

1966. Pollen parent B37 was crossed onto (B37 x 644) ear parent from the previous generation.

1967. Selected kernels from the previous generation were planted out and all self pollinated. Row 4348 page 83, 1967 Nursery Notebook.

1968. Selected ears from the previous generation were planted in ear-to-row fashion and all were self pollinated. One row among others was selected as having favorable plant type. Row 1793 page 41, 1968 Nursery Notebook.

1969. Selected ears from the previous generation were planted in ear-to-row fashion and all were self-pollinated. One row among others was selected as having favorable plant type. Row 691, Page 16, 1969 Nursery Notebook. At this stage and each successive generation, candidate lines were crossed onto yield tester lines for measuring their yield potential.

1970. Selected ears from the previous generation were planted in ear-to-row fashion and all were self-pollinated. One row among others was selected as having favorable plant type. Row 2965, Page 69, 1970 Nursery Notebook.

1971. Selected ears from the previous generation were planted in ear-to-row fashion and all were self-pollinated. One row among others was selected as having favorable plant type. Row 4012, Page 83, 1971 Nursery Notebook.

1972. Selected ears from the previous generation were planted in ear-to-row fashion and all were self-pollinated. One row among others was selected as having favorable plant type. Row 4871, Page 103, 1972 Nursery Notebook.

1973. Selected ears from the previous generation were planted in ear-to-row fashion and all were self-pollinated. One row among others was selected as having favorable plant type. Row 5042, Page 100, 1973 Nursery Notebook.

1974. The finished line from 1973 above was increased and selected with special attention to uniformity of the plant and ear type.

Summary: The line LH-1 was produced by crossing B37 x 644 then backcrossing to B37. Seven generations of selfing and selection for plant type yield an essentially homozygous line.

Attachment:

1. Facsimile reproduction of the notebook pages mentioned above.

1973 Nursery Michigan

7600047

5016. B37)^2 x B37)-1781-3 -4370-1
5017. " "-1781-3 -4370-2
5018. " "-1782-1 -4371-1
5019. " "-1783-1 -4373-1
5020. " "-1783-2 -4374-1
5021. " "-1783-3 4375-1
5022. " "-1783-3 -4375-2
5023. " "-1790-1 -4382-1
5024. " "-1790-2 4383-1
5025. " "-1790-2 -4383-2
5026. B37 x B45)(B37) -678-2 -2941
5027. B37 x B45)(B37) -1773-2 -4492-3
5028. B37 x B45)(B37) -1775-2 -4496-1
5029. B37 x B45)(B37) -1725-1 -4497-1
5030. B37H‡ Pedigree Seem O.K.
5031. B37)^2 x 644) -683-4-1 -3998-1 ?? Pedigree
5032. " "-683-4-1 -3998-2
5033. " "-683-4-1 -3998-3
5034. " "-689-1-1 -4000-1
5035. " "-691-6-1 -4005-1
5036. " "-691-6-1 -4005-2
5037. " "-2957-1-1 -4009-1
5038. " "-2957-2-1 -4010-1
5039. " "-2957-2-1 -4010-2
5040. " "-2957-2-2 -4011-1
5041. " "-2957-2-2 4011-2
5042. " "-2965-1-1 -4012-1
5043. " "-2965-1-2 -4013-1
5044. " "-2967-1-1 -4014-2
5045. " "-2967-1-1 -4014-3
5046. B37)^2 x 644) -2967-2-1 -4017-1
5047. B37H‡ Pedigree O.K.
5048. B37)^2 x 644) -2967-2-2 -4018-1
5049. " "-2969-1-1 -4019-1
5050. " "-2969-1-1 -4019-2
5051. " "-2969-1-2 -4020-1
5052. " "-2975-1-1 -4025-2 dead, premature drying down
5053. " "-1791-1 -4353-1
5054. " "-1791-1 -4353-3
5055. " "-1793-2 -4356-1
5056. " "-1794-1 -4358-1
5057. " "-1794-1 -4358-3
5058. " "-1794-2 -4359-1
5059. " "-1803-2 -4361-1
5060. " "-1803-2 4361-2
5061. " "-1804-1 -4362-1 Premature dying H2 ? Pedigree
5062. " "-1807-5 -4365-1 "
5063. B37H‡
5064. B37)^2 x H23) ⊗ -4367-2 -4384-1
5065. B37)^2 x H23) ⊗ -4367-2 -4385-1
5066. 371 x 644)(371) -1691-3 -4419-2
5067. 371 x 644)(371) -1691-3 -4419-3
5068. 371 x 644)(371) -1691-3 -4419-4
5069. 642)^2 x B37) -4561-2 -4404-1
5070. 642 x C103)(642) ⊗ -4568-1 -4409-1
5071. 642 x C103)(642) ⊗ -4576-1 -4412-1
5072. C103)^2 x642) -4271-5 -4395-1

00003

INSTRUCTIONS

GENERAL: Send an original copy of the application, exhibits and $250.00 fee to U.S. Dept. of Agriculture, Agricultural Marketing Service, Grain Division, 6525 Belcrest Road, Hyattsville, Maryland 20782. (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 Insert the date the applicant determined that he had a new variety based on the definition in Section 41 (a) of the Act and decision is made to increase the seed.

13a 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.

13b 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.

13c A supplemental form will be furnished by the PVPO to describe in detail a variety for each kind of seed.

13d Provide complete data indicative of novelty. Seed and plant specimens or photographs of seed and plant comparisons clearly indicating novelty may be submitted. Seeds submitted may be sterile.

13e Indicate whether applicant is the actual breeder, the employer of the breeder, the owner through purchase or inheritance, etc.

1972 Nursery Notebook 7600047

Range #70 Continued

4841.	B37 x B45)(B37)	674-2-1	4029-1
4842.	" " "	" -2-1	" -2
4843.	" " "	" -2-2	4030-1
4844.	" " "	" -3-3	4034-1-H
4845.	" " "	676-1	4035-1
4846.	" " "	678-2	4037-1
4847.	" " "	1773-1	4491-1
4848.	" " "	" -2	4492-1
4849.	" " "	" -2	" -2
4850.	" " "	" -2	" -3
4851.	" " "	1775-1	4495-1
4852.	" " "	1775-2	4496-1
4853.	B37Ht		
4854.	B37 x B45)(B37)	1725-1	4497-1
4855.	B37)^2 x 644	683-4-1	3998-1
4856.	" "	" -4-1	" -2
4857.	" "	" -4-1	" -3
4858.	" "	689-1-1	4000-1
4859.	" "	" -1-1	" -2
4860.	" "	" -1-1	" -3
4861.	" "	691-6-1	4005-1-H
4862.	" "	" -6-1	" -2
4863.	" "	2953-1-1	4007-1
4864.	" "	" -1-1	" -2
4865.	" "	" -1-1	" -3
4866.	" "	2957-1	4009-1
4867.	" "	2957-2-1	4010-1-H
4868.	" "	" -2-1	" -2
4869.	" "	" -2-2	4011-1
4870.	" "	" -2-2	" -2
4871.	" "	2965-1-1	4012-1-H
4872.	" "	" -1-2	4013-1-H
4873.	B37)^2 x 644	2967-1-1	4014-1-H
4874.	" "	" -1-1	" -2
4875.	" "	" -1-1	" -3
4876.	" "	" -1-2	4015-1
4877.	" "	" -2-1	4017-1
4878.	" "	" -2-2	4018-1
4879.	" "	2969-1-1	4019-1-H
4880.	" "	" -1-1	" -2
4881.	" "	" -1-2	4020-1
4882.	" "	2975-1-1	4023-1
4883.	" "	" -1-1	" -2
4884.	" "	" -1-2	4024-1
4885.	" "	1791-1	4353-1
4886.	" "	" -1	" -2
4887.	" "	" -1	" -3
4888.	" "	1793-2	4356-1
4889.	" "	1794-1	4358-1
4890.	" "	" -1	" -2
4891.	" "	" -1	" -3
4892.	" "	" -2	4359-1
4893.	" "	" -2	" -2

1971 Nursery
7600047

Nursery

Range #56 South to North (cont'd,)

4003.	B37 x 644)(B37	698-1	2977
4004.	" " "	691-6-2	2967
4005.	" " "	" -6-1	
4006.	B37		
4007.	B37 x 644)(B37	2953-1-1	3803
4008.	" " "	" -1-2	"
4009.	" " "	2957-1	3804
4010.	" " "	" -2-1	3805
4011.	" " "	" -2-2	"
4012.	" " "	2965-1-1	3806
4013.	" " "	" -1-2	"
4014.	" " "	2967-1-1	3808
4015.	" " "	" -1-2	"
4016.	B37		
4017.	B37 x 644)(B37	2967-2-1	3807
4018.	" " "	" -2-2	"
4019.	" " "	2969-1-1	3809
4020.	" " "	" -1-2	"
4021.	" " "	2971-1-1	3810
4022.	" " "	" -1-2	"
4023.	" " "	2975-1-1	3811
4024.	" " "	" -1-2	"
4025.	" " "	2979-1	3812
4026.	B37 x B45)(B37	674-1-1	2928
4027.	" " "	" -1-2	"
4028.	" " "	" -1-3	"
4029.	" " "	" -2-1	2929
4030.	" " "	" -2-2	"
4031.	" " "	" -3-1	2930
4032.	" " "	" -3-2	"
4033.	B37		
4034.	B37 x B45)(B37	674-3-3	2930
4035.	" " "	676-1	2931
4036.	" " "	678-1	2941
4037.	" " "	" -2	"
4038.	B37		
4039.	B37 x C103)(B37	654-1	2908
4040.	" " "	657-1	2912
4041.	" " "	" -2	"
4042.	" " "	660-1	2913
4043.	" " "	662-1	2915
4044.	" " "	" -2	"
4045.	" " "	666-1	2918
4046.	" " "	" -2	2919
4047.	" " "	670-2	2924
4048.	B37		
4049.	B37 x B57)(B37	704-1	2984
4050.	" " "	" -3-1	2987
4051.	" " "	" -3-2	"
4052.	N22A x A257)(N22A	629-1	2883
4053.	" " "	" -2-1	2884
4054.	" " "	" -2-2	"
4055.	" " "	631-1	2885

Range 43-continued

2921.	B37 x C103)(B37	668-2	2	1	2	3	2	
2922.	" " "	669	2	2	1	2		
2923.	" " " good	670-1	1	3	1	2		
2924.	" " "	670-2						
2925.	B37							
2926.	B37 x B45)(B37	671-1						
2927.	" " "	671-2						
2928.	" C "	674-1	3	2	3	2		
2929.	" " "	674-2	3	2	2	2	2	
2930.	" " " good	674-3	2	2	2	2		
2931.	" " "	676-1	1	1	2	2		
2932.	" " "	676-2						
2933.	043							
	blank row							
2934.	A641 20 rows							
	blank row							
2935.	A641 Tms ⊗ Lot H99	19 rows						

End of Range 43 North side

RANGE 44 North to South

2936.	A641 Tms Lot H99	21 rows
	blank row	
2937.	A654 5 rows	
	blank row	
2938.	043 1 row	
2939.	B37 x B45)(B37	677-1
2940.	" " "	677-2
2941.	" " "	678 good
2942.	" " "	679-1
2943.	" " "	679-2
2944.	" " "	680 good
2945.	" " "	681
2946.	B37	
2947.	B37 x 644)(B37	683-1
2948.	" " "	683-2
2949.	" " "	683-3
2950.	" " "	683-4
2951.	" " "	683-5
2952.	" " "	683-6
2953.	" " "	683-7
2954.	" " "	685-1
2955.	" " "	685-2
2956.	" " "	687
2957.	" " "	689-1
2958.	" " "	689-2
2959.	B37	
2960.	B37 x 644)(B37	689-3
2961.	" " "	689-4
2962.	" " "	691-1
2963	" " "	691-2
2964.	" " "	691-3
2965.	" " "	691-4
2966.	" " "	691-5
2967.	" " "	691-6

684.	B37 x 644)(B37	1791-2		
685.	"	"		
686.		1793-1		
687.		"		
688.		-2		
689.		"		
690.		1793-3		
691.		"		
692.		1794-1		
693.		-2		
694.		1803-1		
695.		2		
696.		1804-1		
697.		1807-1		
698.		2		
699.		3		
700.		4		
701.		5		
702.	B37 x B37)(B37	1780-1		
703.		2		
704.		1781-1		
705.		2		
706.		3		
707.		1782-1		
708.		2		
709.		1783-1		
710.		2		
711.		3		
712.		4		
713.		4		
714.		4		
715.		1784-1		
716.		2		
717.		2		
718.		3		
719.		3		
720.		3		
721.		1786-1		
722.		1789-1		
723		1790-1		
724.		2		
725.		2		
726.	671 x 598)(671	1808-1	B37 x B14A	Va.35 x N28
727.	"	"		
728.		1810-1		
729.		2		
730.		3		
731.		1812-1		
732.		1814-1		
733.		1		
734.		2		
735.		2		
736.		2		
737.		1815-1		
738.		1819-1		
739.		1		
740.	B37 x B45)(B45	1772-4	Mo17 x 043	B14A x N28

7600047

1791.	B37 x 644)(B37	4348-1	good ear attachment
1792.	"		
1793.	"		
1794.	"		
1795.		2	
1796.	"	2	
1797.		2	
1798.		2	
1799.		3	
1800.		3	
1801.		3	
1802.	"	3	
1803.		4	
1804.		5	
1805.		6	
1806.		7	
1807.		8	
1808.	671 x 598)(671	4240-1	
1809.	"		
1810.	"		
1811.	"		
1812.		-2	
1813.		-2	
1814.		-2	
1815.		2	
1816.	"	2	
1817.		3	
1818.		4	
1819.		5	
1820.	C123 x W59M)(C123	4309-1	good stalk
1821.		-2	" ,good ear
1822.		3	"
1823.	"	4	"
1824.		4	
1825.		4	
1826.		4	
1827.		4	
1828.		4	
1829.	"	5	good stalk
1830.		5	good shank
1831.		5	good stalk
1832.		5	"
1833.		5	"
1834.	"	6	good ear attachment
1835.		7	good stalk
1836.		7	"
1837.		7	"
1838.		7	"
1839.		7	"
1840.		8	"
1841.		9	
1842.		10	
1843.		10	

1967 N

7600047

Range 1 (cont)

4295.	N22A x A257)(N22A)
4296.	" " "
4297.	" " "
4298.	371 x B55)(371)
4299.	" " "
4300.	" " "
4301.	N22A x 371)(N22A)
4302.	" " "
4303.	" " "
4304.	C123 x H23)(C123)
4305.	" " "
4306.	" " "
4307.	" " "
4308.	" " "
4309.	C123 x W59m)(C123)
4310.	" " "
4311.	" " "
4312.	" " "
4313.	" " "
4314.	A239 x C123)(C123)
4315.	" " "
4316.	" " "
4317.	"@ " "
4318.	" " "
4319.	C123 x B41)(C123)
4320.	" " "
4321.	" " "
4322.	" " "
4323.	" " "
4324.	640 x C123(C123)
4325.	" " "
4326.	" " "
4327.	" " "
4328.	" " "
4329.	644 x C123(C123)
4330.	" " "
4331.	" " "
4332.	" " "
4333.	" " "
4334.	B14A x 043(B14A)
4335.	" " "
4336.	" " "
4337.	" " "
4338.	" " "
4339.	B37 x C103)(B37)
4340.	" " "
4341.	" " "
4342.	" " "
4343.	" " "
4344.	B37 x B57)(B37)
4345.	" " "
4346.	" " "
4347.	" " "
4348.	B37 x 644)(B37)
4349.	B37 x B57)(B37)

PV # 7600047

EXHIBIT B

Botanical description of the variety

LH1 is a yellow dent corn inbred. The line is most similar to B37 in plant and ear type but is significantly shorter and lower eared. Hybrids with this line, substituted for B37, are shorter, lower eared and generally have more uniformity and late health.

The stalk of LH1 is of average strength and the roots are fair. Generally, under normal conditions the line has no tillers. Fourteen leaves are normal and are oriented from 30-60 degrees from horizontal. The leaves are separated by relatively short internodes. The anthers are red and extrude from a green glume with red points of dehiscment. The ear is medium in length and has average taper; it is attached to a strong shank of medium length and has a short husk extension. The kernals are arranged in 16 slightly curved rows. The kernel is thick, dark yellow with a bright yellow cap.

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

FORM APPROVED. OMB NO. 40-R3712

EXHIBIT C
(Corn)

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

OBJECTIVE DESCRIPTION OF VARIETY
CORN *(ZEA MAYS)*

NAME OF APPLICANT(S)
Holden's Foundation Seeds, Inc.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
Box 299
Williamsburg, Iowa 52361

FOR OFFICIAL USE ONLY

PVPO NUMBER
7600047

VARIETY NAME OR TEMPORARY DESIGNATION
LH 1

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

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

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

[10][2] DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE — [ ][ ][ ][ ] HEAT UNITS

4. PLANT:

[1][7][8] CM. HEIGHT (To tassel tip)

[0][5][6] CM. EAR HEIGHT (To base of top ear)

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

Number of Tillers:

[1] 1 = NONE 2 = 1–2 3 = 2–3 4 = > 3

Number of Ears Per Stalk:

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

Cytoplasm Type:

[1] 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][2] CM. EAR NODE LEAF

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

00011

PV # 7600047

EXHIBIT D

Data Indicative of Novelty

Novelty is based on the following characters:

LH1 most closely resembles B37 except it is (1) an average of 20% shorter, (2) has a lower ear height by an average of 30%, (3) it restores C cytoplasm nearly 100% while B37 does not restore.

Silking date is approximately the same but there is some indication that LH1 will dry slightly faster, at least to the 25% moisture level.

PV # 7600047

EXHIBIT D

ANALYSIS OF VARIANCE FOR PLANT AND EAR HEIGHT

Plant Height-Williamsburg, Iowa

line	Replications I	II	III	Total	Mean
LH1	70	71	70	211	70
B37	83	87	78	248	83
Total	153	158	148	459	77

ANOV

Source of Variation	d.f.	SS	MS	observed F	required F 5%	1%
Total	5	269				
Blocks	2	24	12			
Treatments	1	228	228	26.8*	18.51	98.49
Error	2	17	8.5			

Plant Height-Marshalltown, Iowa

line	Replications I	II	III	Total	Mean
LH1	59	64	64	187	62.3
B37	78	78	79	235	78.3
Total	137	142	143	422	70.3

ANOV

Source of Variation	d.f.	SS	MS	observed F	required F 5%	1%
Total	5	401				
Blocks	2	10	2			
Treatments	1	384	384	109.7**	18.51	98.49
Error	2	7	3.5			

PV# 7600047

EXHIBIT D

ANALYSIS OF VARIANCE FOR PLANT AND EAR HEIGHT

Ear Height-Williamsburg, Iowa

line	Replications I	II	III	Total	Mean
LH1	22	21	23	66	22
B37	30	34	32	96	32
Total	52	55	55	162	27

ANOV

Source of Variation	d.f.	SS	MS	observed F	required F 5%	1%
Total	5	160				
Blocks	2	3	1.5	*		
Treatments	1	150	150	42.86	18.51	98.49
Error	2	7	3.5			

Ear Height-Marshalltown, Iowa

line	Replications I	II	III	Total	Mean
LH1	18	13	20	51	17
B37	28	33	30	91	30
Total	46	46	50	142	24

ANOV

Source of Variation	d.f.	SS	MS	observed F	required F 5%	1%
Total	5	305				
Blocks	2	5	2.5			
Treatments	1	266	266	15.65 N.S.	18.51	98.49
Error	2	34	17			

PV# 7600047

EXHIBIT E

Statement of Applicant's Ownership

Holden's Foundation Seeds, Inc., Williamsburg, Iowa, is the original and only breeder of the LH1 variety of corn for which it solicits a certificate of protection.