No. 9900041

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

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 ICING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY CTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN, FIELD

'PH0B3'

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 sixth day of November, in the year two thousand one.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055

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 Act of 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 protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*

Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

3. VARIETY NAME

PH0B3

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

Research and Product Development
P.O. Box 85
Johnston, IA 50131-0085

5. TELEPHONE *(include area code)*

515/270-4051

6. FAX *(include area code)*

515/253-2125

FOR OFFICIAL USE ONLY

PVPO NUMBER

9900041

FILING DATE

11/04/1998

7. GENUS AND SPECIES NAME

Zea Mays

8. FAMILY NAME *(Botanical)*

Gramineae JRM 2/22/01

9. CROP KIND NAME *(Common name)*

Corn

FEES RECEIVED

FILING AND EXAMINATION FEE: $ 2450.00

DATE 11/04/1998

CERTIFICATION FEE: $ 320.00

DATE 10/15/01

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

Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

Iowa

12. DATE OF INCORPORATION

May 6, 1926

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

Steven R. Anderson
Research and Product Development
P.O. Box 85
Johnston, IA 50131-0085

14. TELEPHONE *(include area code)*

515/270-4051

15. FAX *(include area code)*

515/253-2125

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

a. ☒ Exhibit A. Origin and Breeding Histroy of the Variety
b. ☒ Exhibit B. Statement of Distincness
c. ☒ Exhibit C. Objective Description of the Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
f. ☒ Voucher Sample *(2,600 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treaurere 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)* ☒ 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 SEED?

☐ 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)* United States, April 17, 1998 ☐ 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 results in penalties.

SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s)) Steven R Anderson	
NAME *(Please print or type)*		NAME *(Please print or type)* Steven R. Anderson	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE Senior Research Associate	DATE 10-29-98

INSTRUCTIONS

9900041

GENERAL: To be effectively filed with the Plant Variety protection Office (PVPO), ALL of the following items must be received in the PVPO: (1) Completed application form signed by the owner; (2) completed Exhibits A,B,C,E; (3) at least 2,500 viable untreated seeds, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in a approved public repository; (4) check drawn on a U.S. bank for $2,450 ($300 filing fee and $2,150 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety production Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Blvd., Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $300 for issuance of the Certificate.

Plant Variety Protection Office
Telephone: (301) 504-5518

ITEM

16a. 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) evidence of uniformity and stability; and

(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified.

16b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety 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 are clear differences;

(3) submit, if helpful, seed and plant specimens of photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

16c. Exhibit C forms are available from the PVPO for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

16d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, etc.

16e. Section 52(5) of the Act required applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

17. 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 this affirmative decision after the variety has been sold and so labelled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

20. *See sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

NOTES; It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant should check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705.
Telephone: (301) 504-8089.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate of any other aspect of this collection of information, including suggestions for reducing this burden , to Department of Agriculture, Clearance Officer, OIRM, AG Box 7630, Jamie L. Whitten Building, Washington, D.C. 20250. When replying, refer to OMB No. 0581-0055 and form number in your letter. Under the PRA of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

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Exhibit A. Origin and Breeding History

Pedigree: High oil synthetic F2 from Yugoslavia)B53242X

Pioneer Line PH0B3, Zea mays L., a dent corn inbred, was developed by Pioneer Hi-Bred International, Inc. from the F2 population acquired from Yugoslavia using the pedigree method of breeding. This inbred was developed for use as an early high oil pollinator for the Top Cross system. Yield trials were grown at Pioneer research locations. After initial testing, additional hybrid combinations have been evaluated and subsequent generations of the line have been grown and hand-pollinated with observations made for uniformity.

PH0B3 has shown uniformity and stability for all traits as described in Exhibit C - "Objective Description of Variety". It has been self-pollinated and ear-rowed 5 generations with careful attention paid to uniformity of plant type to assure genetic homozygousity and phenotypic stability. Since then, this line has been increased both by hand and in isolated fields with continued observations for uniformity.

No variant traits have been observed or are expected in PH0B3.

The criteria used in the selection of PH0B3 were high oil content, earliness, yield, both per se and in hybrid combinations; cold tolerance, root lodging resistance, kernel size, especially important in production; ability to germinate in adverse conditions; number of tillers, especially important in production because having numerous tillers increases hybrid production costs spent on detasseling; disease and insect resistance; pollen yield; and tassel size.

PH0B3 was derived from DS7UC7. This was from cycle 7 of a high oil population synthesized by recombination of elite inbred lines derived from U.S. Corn Belt, Canadian and Yugoslavia origin populations according to Misevic et. al., 1985. The population came from Maize Research Institute - Zemun Polje of Yugoslavia.

TMS 9/19/01

Misevic, D., D.E. Alexander, J. Dumanovic, and S. Ratkovic, 1985
Recurrent Selection for Percent Oil in Corn. Genetika (Zemun, Yugosl.) 17:97-106.

The line PH0B3 has been increased both by hand and in isolated fields with continued observations for uniformity and stability throughout development, and for 3 generations during the final stages of inbred development and seed multiplication.

Exhibit A

DEVELOPMENTAL HISTORY FOR PH0B3

Season/Year	Inbreeding Level
	*(S0)F2 Many ears selected for oil
	*F3 Selected best ears for oil
May, 1992	*F4 Selected best ears for oil
Nov, 1992	*F5 Selected best ears for oil
May, 1993	*F6 Selected best oil content and agronomics
May, 1994	F7 Bulk Increase

#PH0B3 was selfed and selected through F6 generation.

*PH0B3 was selfed and ear-rowed from F2 through F6 generation for 5 generations

Exhibit B. Novelty Statement

Variety PH0B3 mostly resembles Pioneer Hi-Bred International, Inc. proprietary inbred line PHAJ0. The data in Table 1A and 1B are from paired comparisons collected primarily from two environments in Johnston, IA and 1 environment in Ankeny, IA. The data in Table 2 are from paired comparisons at multiple locations grown primarily in the adapted growing area of PH0B3. The traits in Table 1A, 1B, and Table 2 collectively show measurable differences between the two varieties.

Variety PH0B3 has longer ear length than PHAJ0 (17.5 cm vs 12.9 cm) (Table 1A, 1B).
Variety PH0B3 has longer husk length than PHAJ0 (22.7 cm vs 16.3 cm) (Table 1A, 1B).
Variety PH0B3 has longer kernel length than PHAJ0 (9.5 mm vs 8.5 mm) (Table 1A, 1B).
Variety PH0B3 has less kernel thickness than PHAJ0 (4.1 mm vs 5.5 mm) (Table 1A, 1B).
Variety PH0B3 has longer leaf length than PHAJ0 (83.1 cm vs 57.9 cm) (Table 1A, 1B).
Variety PH0B3 has wider leaf width than PHAJ0 (8.3 cm vs 7.2 cm) (Table 1A, 1B).
Variety PH0B3 has more dense tassel axis floret density than PHAJ0 (14.7 florets/4cm vs 9.8 florets/4cm) (Table 1A, 1B).
Variety PH0B3 has longer tassel length than PHAJ0 (62.4 cm vs 50.7 cm) (Table 1A, 1B).

Variety PH0B3 reaches 50% pollen shed (GDUSHD) later than PHAJ0 (1291 GDU's vs 1106 GDU's) (Table 2).
Variety PH0B3 reaches 50% silking (GDUSLK) later than PHAJ0 (1347 GDU's vs 1125 GDU's) (Table 2).
Variety PH0B3 has greater pollen weight (POLWT) than PHAJ0 (243.9 g/100 plants vs 115.9 g/100 plants) (Table 2).
Variety PH0B3 has a greater pollen score (POLSC) than PHAJ0 (7.0 vs 3.5) (Table 2).
Variety PH0B3 has greater tassel weight (TASWT) than PHAJ0 (5.1 g/plant vs 3.1 g/plant) (Table 2).

JMS 9/19/01

A t-test was used to compare differences between means and the appropriate parameters have been included. It is difficult to collect standard deviations for table 2 due to the way the historical data was stored.

Exhibit B Novelty Statement Tables

Table 1A. These data indicate differences between varieties PH0B3 and PHAJ0. Data are from multiple environments in 1998. A t-test was used to compare differences between means. Data is broken out by environment in 1998.

station	loc	year	Trait	variety-1	variety-2	Count-1	Count-2	Mean-1	Mean-2	Mean_Diff	StdDeviation-1	StdDeviation-2	StdError-1	StdError-2	DF_Pooled	t-value pooled	Prob_(2-tail)_Pooled
AD	20N	98	ear length (cm)	PH0B3	PHAJ0	5	5	16.6	12.6	4.0	1.949	1.673	0.872	0.748	8	3.48	0.008
IT	NF	98	ear length (cm)	PH0B3	PHAJ0	5	5	18.2	13.6	4.6	0.447	0.894	0.200	0.400	8	10.29	0.000
JH	95	98	ear length (cm)	PH0B3	PHAJ0	5	5	17.8	12.4	5.4	1.304	1.140	0.583	0.510	8	6.97	0.000
AD	20N	98	husk length (cm)	PH0B3	PHAJ0	5	5	21.0	17.0	4.0	2.000	1.581	0.894	0.707	8	3.51	0.008
IT	NF	98	husk length (cm)	PH0B3	PHAJ0	5	5	24.0	15.0	9.0	1.225	1.225	0.548	0.548	8	11.62	0.000
JH	95	98	husk length (cm)	PH0B3	PHAJ0	5	5	23.2	16.8	6.4	1.483	0.837	0.663	0.374	8	8.40	0.000
AD	20N	98	kernel length (mm)	PH0B3	PHAJ0	5	5	9.2	8.4	0.8	0.447	0.548	0.200	0.245	8	2.53	0.035
IT	NF	98	kernel length (mm)	PH0B3	PHAJ0	5	5	9.6	8.4	1.2	0.548	0.548	0.245	0.245	8	3.46	0.009
JH	95	98	kernel length (mm)	PH0B3	PHAJ0	5	5	9.8	8.8	1.0	0.447	0.447	0.200	0.200	8	3.54	0.008
AD	20N	98	kernel thickness (mm)	PH0B3	PHAJ0	5	5	4.0	5.4	-1.4	0.000	0.548	0.000	0.245	8	-5.72	0.000
IT	NF	98	kernel thickness (mm)	PH0B3	PHAJ0	5	5	4.4	5.4	-1.0	0.548	0.548	0.245	0.245	8	-2.89	0.020
JH	95	98	kernel thickness (mm)	PH0B3	PHAJ0	5	5	4.0	5.8	-1.8	0.000	0.447	0.000	0.200	8	-9.00	0.000
AD	20N	98	leaf length (cm)	PH0B3	PHAJ0	5	5	83.0	63.8	19.2	2.345	0.837	1.049	0.374	8	17.24	0.000
IT	NF	98	leaf length (cm)	PH0B3	PHAJ0	5	5	93.6	57.4	36.2	4.879	2.408	2.182	1.077	8	14.88	0.000
JH	95	98	leaf length (cm)	PH0B3	PHAJ0	5	5	72.8	52.6	20.2	2.950	4.037	1.319	1.806	8	9.03	0.000
AD	20N	98	leaf width (cm)	PH0B3	PHAJ0	5	5	8.4	7.2	1.2	0.548	0.447	0.245	0.200	8	3.79	0.005
IT	NF	98	leaf width (cm)	PH0B3	PHAJ0	5	5	7.6	6.8	0.8	0.548	0.447	0.245	0.200	8	2.53	0.035
JH	95	98	leaf width (cm)	PH0B3	PHAJ0	5	5	9.0	7.6	1.4	0.707	0.548	0.316	0.245	8	3.50	0.008
AD	20N	98	tassel axis floret density (# of florets/4cm)	PH0B3	PHAJ0	5	5	16.6	10.0	6.6	1.517	2.121	0.678	0.949	8	5.66	0.000
IT	NF	98	tassel axis floret density (# of florets/4cm)	PH0B3	PHAJ0	5	5	10.6	7.0	3.6	1.342	1.581	0.600	0.707	8	3.88	0.005
JH	95	98	tassel axis floret density (# of florets/4cm)	PH0B3	PHAJ0	5	5	17.0	12.4	4.6	2.236	2.302	1.000	1.030	8	3.20	0.013
AD	20N	98	tassel length (cm)	PH0B3	PHAJ0	5	5	59.0	50.2	8.8	4.848	4.087	2.168	1.828	8	3.10	0.015
IT	NF	98	tassel length (cm)	PH0B3	PHAJ0	5	5	60.2	47.4	12.8	5.070	5.857	2.267	2.619	8	3.70	0.006
JH	95	98	tassel length (cm)	PH0B3	PHAJ0	5	5	68.0	54.6	13.4	5.477	1.517	2.449	0.678	8	5.27	0.001

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Table 1B. Summary data pooled across environments in 1998.

year	Trait	variety-1	variety-2	Count-1	Count-2	Mean-1	Mean-2	Mean_Diff	StdDeviation-1	StdDeviation-2	StdError-1	StdError-2	DF_Pooled	t-Value_Pooled	Prob_(2-tail)_Pooled
98	ear length (cm)	PH0B3	PHAJ0	15	15	17.5	12.9	4.7	1.457	1.302	0.376	0.336	28	9.25	0.000
98	husk length (cm)	PH0B3	PHAJ0	15	15	22.7	16.3	6.5	1.981	1.486	0.511	0.384	28	10.11	0.000
98	kernel length (mm)	PH0B3	PHAJ0	15	15	9.5	8.5	1.0	0.516	0.516	0.133	0.133	28	5.30	0.000
98	kernel thickness (mm)	PH0B3	PHAJ0	15	15	4.1	5.5	-1.4	0.352	0.516	0.091	0.133	28	-8.68	0.000
98	leaf length (cm)	PH0B3	PHAJ0	15	15	83.1	57.9	25.2	9.387	5.391	2.424	1.392	28	9.02	0.000
98	leaf width (cm)	PH0B3	PHAJ0	15	15	8.3	7.2	1.1	0.816	0.561	0.211	0.145	28	4.43	0.000
98	tassel axis floret density (# of florets/4cm)	PH0B3	PHAJ0	15	15	14.7	9.8	4.9	3.432	2.957	0.886	0.763	28	4.22	0.000
98	tassel length (cm)	PH0B3	PHAJ0	15	15	62.4	50.7	11.7	6.300	4.964	1.627	1.282	28	5.63	0.000

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Exhibit B Novelty Statement Tables

Table 2. These data indicate differences between varieties PH0B3 and PHAJ0. Data are from multiple locations and years grown primarily in the adapted growing area.

Variety 1 = PH0B3
Variety 2 = PHAJ0

		GDU	GDU	POL	POL	TAS
	VAR	SHD	SLK	WT	SC	WT
YEAR	#	ABS	ABS	ABS	ABS	ABS
94	1	1338	1395	200.4	9.0	4.5
	2	1113	1135	84.3	3.0	2.8
	LOCS	4	4	3	1	3
	REPS	4	4	3	1	3
	PROB	.014+	.008#	.075*		.018+
95	1	1286	1350		7.0	
	2	1058	1090		5.0	
	LOCS	8	9		1	
	REPS	11	12		1	
	PROB	.000#	.000#			
96	1	1298	1349		7.0	
	2	1144	1153		6.0	
	LOCS	12	12		1	
	REPS	12	12		1	
	PROB	.000#	.000#			
97	1	1274	1321	255.7	6.0	5.3
	2	1098	1114	124.6	1.6	3.2
	LOCS	20	20	11	2	11
	REPS	25	25	16	4	16
	PROB	.000#	.000#	.000#	.054*	.000#
98	1	1301	1373			
	2	1110	1139			
	LOCS	12	12			
	REPS	12	12			
	PROB	.000#	.000#			
TOTAL SUM	1	1291	1347	243.9	7.0	5.1
	2	1106	1125	115.9	3.5	3.1
	LOCS	56	57	14	5	14
	REPS	64	65	19	7	19
	DIFF	185	222	128.0	3.5	2.0
	PROB	.000#	.000#	.000#	.018+	.000#

9900041

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
Pioneer Hi-Bred International, Inc.		PH0B3
Address (Street & No., or RFD No., City, State, ZipCode and Country		FOR OFFICIAL USE
7301 NW 62nd Avenue, P.O. Box 85, Johnston, Iowa 50131-0085		9900041 PVP0 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 an '*' 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:		Yellow Dent (Unrelated):	Sweet Corn:
Family	Members	Co109, ND246,	C13, Iowa5125, P39, 2132
B14	CM105, A632, B64, B68	Oh7, T232,	
B37	B37, B76, H84	W117, W153R,	Popcorn:
B73	N192, A679, B73, NC268	W18BN	SG1533, 4722, HP301, HP7211
C103	Mo17, Va102, Va35, A682		
Oh43	A619, MS71, H99, Va26	White Dent:	Pipecorn:
WF9	W64A, A554, A654, Pa91	C166, H105, Ky228	Mo15W, Mo16W, Mo24W

Ceres/worddata/doug/96pvp

EXHIBIT C: PH0B3

1. TYPE: (describe intermediate types in Comments section):	Standard Variety Name
3 1=Sweet 2=Dent 3=Flint 4=Flour 5=Pop 6=Ornamental	CM105
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 AMES 19315

3. MATURITY (In Region of Best Adaptability; show Heat Unit formula in 'Comments' section)

DAYS	HEAT UNITS		DAYS	HEAT UNITS
064	1,309.0	From emergence to 50% of plants in silk	062	1,232.0
063	1,274.2	From emergence to 50% of plants in pollen	062	1,227.4
004	0,111.2	From 10% to 90% pollen shed	004	0,095.4
		From 50% silk to optimum edible quality		
074	1,583.6	From 50% silk to harvest at 25% moisture	075	1,637.2

4. PLANT:	Standard Deviation	Sample Size		Standard Deviation	Sample Size
225.2 cm Plant Height (to tassel tip)	27.22	05	166.6	11.76	05
065.4 cm Ear Height (to base of top ear node)	02.19	05	055.0	07.78	05
016.7 cm Length of Top Ear Internode	01.03	05	013.2	02.63	05
0.0 Average Number of Tillers	00.02	05	0.0	00.01	05
1.0 Average Number of Ears per Stalk	00.00	05	1.0	00.00	05
1 Anthocyanin of Brace Roots: 1=Absent 2=Faint 3=Moderate 4=Dark			4		

5. LEAF:	Standard Deviation	Sample Size		Standard Deviation	Sample Size
07.9 cm Width of Ear Node Leaf	00.81	05	07.3	00.81	05
82.8 cm Length of Ear Node Leaf	08.33	05	72.4	02.24	05
06 Number of leaves above top ear	00.84	05	05	00.69	05
28 Degrees Leaf Angle (measure from 2nd leaf above ear at anthesis to stalk above leaf)	07.36	05	38	08.26	05
03 Leaf Color (Munsell code) 5GY36			03	5GY44	
1 Leaf Sheath Pubescence (Rate on scale from 1=none to 9=like peach fuzz)			2		
6 Marginal Waves (Rate on scale from 1=none to 9=many)			5		
7 Longitudinal Creases (Rate on scale from 1=none to 9=many)			7		

6. TASSEL:	Standard Deviation	Sample Size		Standard Deviation	Sample Size
08 Number of Primary Lateral Branches	01.69	05	04	01.25	05
17 Branch Angle from Central Spike	05.38	05	25	07.19	05
59.2 cm Tassel Length (from top leaf collar to tassel tip)	05.64	05	45.5	04.51	05
7 Pollen Shed (rate on scale from 0=male sterile to 9=heavy shed)			6		
11 Anther Color (Munsell code) 7.5R56			07	5Y94	
01 Glume Color (Munsell code) 2.5GY66			01	5GY66	
1 Bar Glumes (Glume Bands): 1=Absent 2=Present			1		

Application Variety Data	PH0B3	Page 2	Standard Variety Data

	7a. EAR (Unhusked Data):		
11	Silk Color (3 days after emergence) (Munsell code)	7.5R56	07 2.5GY96
01	Fresh Husk Color (25 days after 50% silking) (Munsell code)	5GY68	02 5GY66
21	Dry Husk Color (65 days after 50% silking) (Munsell code)	2.5Y84	21 2.5Y8.54
2	Position of Ear at Dry Husk Stage: 1= Upright 2= Horizontal 3= Pendant		2
7	Husk Tightness (Rate of Scale from 1=very loose to 9=very tight)		6
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	02.27	05	14.8	00.61	05
35.0	mm Ear Diameter at mid-point	00.86	05	39.0	00.72	05
081.6	gm Ear Weight	17.74	05	86.2	08.68	05
11	Number of Kernel Rows	01.11	05	13.7	00.64	05
2	Kernel Rows: 1=Indistinct 2=Distinct			2		
1	Row Alignment: 1=Straight 2=Slightly Curved 3=Spiral			1		
10.3	cm Shank Length	02.37	05	10.6	01.87	05
2	Ear Taper: 1=Slight 2= Average 3=Extreme			2		

	8. KERNEL (Dried)	Standard Deviation	Sample Size		Standard Deviation	Sample Size
09.6	mm Kernel Length	00.47	05	09.8	00.22	05
08.0	mm Kernel Width	00.64	05	08.0	00.00	05
04.1	mm Kernel Thickness	00.27	05	04.2	00.26	05
32.2	% Round Kernels (Shape Grade)	05.60	02	29.2	06.26	02
1	Aleurone Color Pattern: 1-Homozygous 2=Segregating			1		
07	Aluerone Color (Munsell code)	2.5Y816		07	2.5Y814	
07	Hard Endosperm Color (Munsell code)	2.5Y816		07	2.5Y814	
09	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_____			3		
20.6	gm Weight per 100 Kernels (unsized sample)	03.65	05	23.40	01.14	05

	9. COB:	Standard Deviation	Sample Size		Standard Deviation	Sample Size
20.4	mm Cob Diameter at mid-point	00.43	05	25.7	00.44	05
14	Cob Color (Munsell code) 7.5R36			14	10R46	

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):		
A. Leaf Blights, Wilts, and Local Infection Diseases		
	Anthracnose Leaf Blight (Colletotrichum graminicola)	
	Common Rust (Puccinia sorghi)	
	Common Smut (Ustilago maydis)	
	Eyespot (Kabatiella zeae)	
8	Goss's Wilt (Clavibacter michiganense spp. nebraskense)	5
4	Gray Leaf Spot (Cercospora zeae-maydis)	2
	Helminthosporium Leaf Spot (Bipolaris zeicola) Race ———	
4	Northern Leaf Blight (Exserohilum turcicum) Race ———	2
	Southern Leaf Blight (Bipolaris maydis) Race ———	
	Southern Rust (Puccinia polysora)	
2	Stewart's Wilt (Erwinia stewartii)	1
	Other (Specify) ———	
B. Systemic Diseases		
4	Corn Lethal Necrosis (MCMV and MDMV)	5
9	Head Smut (Sphacelotheca reiliana)	8
	Maize Chlorotic Dwarf Virus (MDV)	
	Maize Chlorotic Mottle Virus (MCMV)	
	Maize Dwarf Mosaic Virus (MDMV)	
	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)	
5	Gibberella Ear Rot (Gibberella zeae)	3
	Other (Specify) ———	

9900041

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

	Banks grass Mite (Oligonychus pratensis)	
	Corn Worm (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)	
1	1st Generation (Typically Whorl Leaf Feeding)	4
	2nd Generation (Typically Leaf Sheath-Collar Feeding)	
	Stalk Tunneling	
	cm tunneled/plant	
	Fall Armyworm (Spodoptera fruqiperda)	
	Leaf Feeding	
	Silk Feeding	
	mg larval wt.	
	Maize Weevil (Sitophilus zeamaize	
	Northern Rootworm (Diabrotica barberi)	
	Southern Rootworm (Diabrotica undecimpunctata)	
	Southwestern Corn Borer (Diatreaea grandiosella)	
	Leaf Feeding	
	Stalk Tunneling	
	cm tunneled/plant	
	Two-spotted Spider Mite (Tetranychus urticae)	
	Western Rootworm (Diabrotica virgifrea virgifera)	
	Other (Specify) ———	

12. AGRONOMIC TRAITS:

4	Staygreen (at 65 days after anthesis) (Rate on a scale from 1=worst to excellent)	2
0.4	% Dropped Ears (at 65 days after anthesis)	0.0
	% Pre-anthesis Brittle Snapping	
	% Pre-anthesis Root Lodging	
0.0	Post-anthesis Root Lodging (at 65 days after anthesis)	0.0
1,996.7	Kg/ha Yield of Inbred Per Se (at 12-13% grain moisture)	2,136.7

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

1 Isozymes 0 RFLP's 0 RAPD's

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

CLARIFICATION OF DATA IN EXHIBITS B, C AND D

Please note the data presented in Exhibit C, "Objective Description of Variety," are collected primarily at 2 environments in Johnston, Iowa and 1 environment near Ankeny, IA. The data in Exhibit B, and D are from comparisons of inbreds grown in the same tests in the adapted growing area of PH0B3 and in Johnston, IA.

JMS 9/19/01

The data collected in exhibit C was collected in 1995 and 1998 for page 1 and 2. There are environmental factors that differ from environment to environment. The environments had different planting dates. Environmental temperature and precipitation differences during the vegetative and grain fill periods can impact plant and grain traits and be a source of variability. These data are based on 5 plants measured at each location. The variation between traits collected in different years is usually higher than variation between locations in a given year or within locations. Please see Table 3 for average temperature and rainfall information in 1995 and 1998.

Table 3. Temperature and Rainfall

TEMPERATURE

YEAR	MAY	JUN	JULY	AUG	AVERAGE
1994	59.8	70.7	71.9	69.0	**67.9**
1995	56.2	69.4	74.3	76.9	**69.2**
1996	56.2	69.3	71.3	70.5	**66.8**
1997	53.5	70.6	74.1	69.6	**67.0**
1998	64.7	66.6	74.8	73.5	**69.9**
1999	60.7	69.7	78.7	70.5	**69.9**

RAINFALL

YEAR	MAY	JUN	JULY	AUG	Total
1994	3.67	5.75	1.71	4.18	**15.31**
1995	5.04	4.19	2.94	2.87	**15.04**
1996	8.47	4.35	2.51	2.14	**17.47**
1997	4.32	3.27	4.10	1.36	**13.05**
1998	6.46	11.07	5.70	4.96	**28.19**
1999	6.46	4.54	4.45	6.55	**21.85**

Exhibit D. Additional Paired Comparison Data

VAR #1 PH0B3														
VAR #2 PHAJ0														
		BU	GQU	MST	SDG	TIL	GDU	GDU	POL	POL	TAS	PLT	EAR	RT
	VAR	ACR	/HA		VGR	LER	SHD	SLK	WT	SC	SZ	HT	HT	LDG
YEAR	#	%MN	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS (cm.)	ABS (cm.)	ABS
94	1				5.0	0.8	1338.0	1395.0	200.4	9.0	9.0			33.3
	2				2.0	5.3	1113.0	1135.0	84.3	3.0	8.0			50.0
	LOCS				1	3	4	4	3	1	1			1
	REPS				1	3	4	4	3	1	1			1
	PROB					0.511	.014+	.008#	.075*					
95	1	66.0	19.9	15.4	6.3	1.5	1286.0	1350.0		7.0	6.3	202.2	58.4	
	2	36.0	10.8	15.9	4.5	1.1	1058.0	1090.0		5.0	5.6	160.0	56.6	
	LOCS	3	3	3	2	7	8	9		1	8	5	5	
	REPS	6	6	6	4	11	11	12		1	9	8	8	
	PROB	.057*	.071*	0.724	0.395	0.731	.000#	.000#			0.217	.006#	0.351	
96	1				1.0	12.4	1298.0	1349.0		7.0	6.5	236.2	78.7	100.0
	2				3.0	0.0	1144.0	1153.0		6.0	4.7	197.4	68.6	100.0
	LOCS				1	3	12	12		1	11	3	2	1
	REPS				1	3	12	12		1	11	3	2	1
	PROB					0.358	.000#	.000#			.008#	.089*	0.295	
97	1				5.1	3.9	1274.0	1321.0	255.7	6.0	6.9	206.2	75.7	
	2				3.6	1.2	1098.0	1114.0	124.6	1.6	5.5	166.1	62.5	
	LOCS				8	4	20	20	11	2	16	5	5	
	REPS				11	4	25	25	16	4	21	5	5	
	PROB				.003#	0.187	.000#	.000#	.000#	.054*	.001#	.041+	.051*	
98	1	84.0	33.8	16.6	5.0	1.2	1301.0	1373.0			5.8	203.2	71.9	100.0
	2	56.0	22.6	14.6	4.8	8.0	1110.0	1139.0			4.4	168.1	57.2	50.0
	LOCS	1	1	1	6	3	12	12			5	5	4	1
	REPS	1	1	1	6	3	12	12			5	5	4	1
	PROB				0.842	0.423	.000#	.000#			0.206	0.137	0.482	
TOTAL SUM	1	70.0	23.4	15.7	4.9	3.5	1291.0	1347.0	243.9	7.0	6.6	209.3	69.9	77.8
	2	41.0	13.7	15.5	4.0	2.6	1106.0	1125.0	115.9	3.5	5.3	170.2	60.2	66.7
	LOCS	4	4	4	18	20	56	57	14	5	41	18	16	3
	REPS	7	7	7	23	24	64	65	19	7	47	21	19	3
	DIFF	30.0	9.7	0.2	1.0	0.9	185.0	222.0	128.0	3.5	1.3	39.1	9.7	11.1
	PROB	.012+	.014+	0.881	.026+	0.702	.000#	.000#	.000#	.018+	.000#	.000#	.053*	0.635

Exhibit D. Additional Paired Comparison Data

VAR #1 PH0B3												
VAR #2 PHAJ0												
		STK	BRT	SCT	EAR	BAR	DRP	GRN	TEX	EAR	TAS	TAS
	VAR	LDG	STK	GRN	SZ	PLT	EAR	APP	EAR	MLD	WT	BRN
YEAR	#	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS	ABS
94	1		87.5			87.5					4.5	
	2		90.9			90.9					2.8	
	LOCS		1			1					3	
	REPS		1			1					3	
	PROB										.018+	
95	1	89.9		7.0		89.7	99.6	7.0		5.0		
	2	95.3		7.0		88.6	100.0	6.0		5.5		
	LOCS	3		1		4	3	3		2		
	REPS	6		2		4	6	6		3		
	PROB	0.152				0.876	0.423	0.225		0.5		
96	1			7.7	7.0	99.0			8.0	7.0		
	2			6.7	4.0	96.4			9.0	6.5		
	LOCS			3	1	4			1	2		
	REPS			3	1	4			1	2		
	PROB			0.58		0.568				0.5		
97	1		100.0	8.3		95.0			5.0	7.7	5.3	
	2		99.5	7.3		96.6			8.0	7.3	3.2	
	LOCS		1	3		4			1	3	11	
	REPS		2	3		4			1	3	16	
	PROB			0.423		0.519				0.742	.000#	
98	1		100.0			78.9						6.0
	2		100.0			90.0						6.0
	LOCS		1			2						1
	REPS		1			2						1
	PROB					0.649						
TOTAL SUM	1	89.9	95.8	7.9	7.0	92.0	99.6	7.0	6.5	6.7	5.1	6.0
	2	95.3	96.8	7.0	4.0	93.2	100.0	6.0	8.5	6.6	3.1	6.0
	LOCS	3	3	7	1	15	3	3	2	7	14	1
	REPS	6	4	8	1	15	6	6	2	8	19	1
	DIFF	5.3	1.0	0.9	3.0	1.2	0.4	1.0	2.0	0.1	2.0	0.0
	PROB	0.152	0.506	0.27		0.68	0.423	0.225	0.295	0.736	.000#	

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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 of 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 protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)

PIONEER HI-BRED INTERNATIONAL, INC.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

3. VARIETY NAME

PH0B3

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

7301 NW 62nd AVENUE
P.O.BOX 85
JOHNSTON, IA 50131-0085

5. TELEPHONE *(include area code)*

515-270-4051

6. FAX *(include area code)*

515-253-2125

7. PVPO NUMBER

9900041

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 one of 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(ies), is(are) 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)*:

This variety is owned by Pioneer Hi-Bred International Inc.

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 national 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.

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