No. 9200061

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

United AgriSeeds, 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 eighteen 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 ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT T. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

CORN

'NQ508'

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* 28th *day of* May *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth R. Evans

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Mike Espy

Secretary of Agriculture

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Agriculture, Clearance Office, OIRM, Room 404-W, Washington, D.C. 20250; and to the Office of Management and Budget, Paperwork Reduction Project (OMB #0581-0055), Washington, 20250.

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

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)*: United AgriSeeds, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.: P3713-1A4131B

3. VARIETY NAME: NQ508

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*: 103 Tomaras Ave. Savoy, IL 61874

5. PHONE *(Include area code)*: (217)373-5300

FOR OFFICIAL USE ONLY

PVPO NUMBER: 9200061

FILING — Date: Jan. 7, 1992 — Time: ☐ A.M. ☐ P.M

FEES RECEIVED — Filing and Examination Fee: $2150.— — Date: Jan. 7, 1992 — Certificate Fee: $250.00 — Date: May 21, 1993

6. GENUS AND SPECIES NAME: Zea Mays

7. FAMILY NAME *(Botanical)*: Gramineae

8. CROP KIND NAME *(Common Name)*: Corn, Dent

9. DATE OF DETERMINATION: 12/88

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*: Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION: Massachusetts

12. DATE OF INCORPORATION: 8/28/81

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

JMS 2/9/93

John Rombach
United AgriSeeds, Inc.
~~103 Tomaras Ave.~~
~~Savoy, IL 61874~~
P.O. Box 637
Marshalltown, IA 50158

PHONE *(Include area code)*: ~~(217) 373-5300~~ 515 752-4626

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. ☒ Exhibit A, Origin and Breeding History of the Variety.
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety.
d. ☐ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 12/20/91
g. ☒ Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. 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) of the Plant Variety Protection Act.)*
☐ YES *(If "YES," answer items 16 and 17 below)* ☒ NO *(If "NO," skip to item 18 below)*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ YES *(If "YES," through* ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____ .)
☒ NO

19. HAS 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)
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds 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 Protection Act.

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

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
(UNITED AGRISEEDS)	Manager	12/19/91
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE

FORM CSSD-470 (5-89) Edition of FORM LS-470, 3-86, is obsolete.

Exhibit A
Origin and Breeding History
Dent Corn
NQ508

Summer 1980 - Pioneer 3713 grown at Grand Island, NE. Plants were self-pollinated to produce F_2 (S_0) seed.

Summer 1981 - S_0 seed grown at Grand Island. Selected pollinations saved to produce S_1 seed.

Winter 1981 - S_1 ear rows seed grown in Hawaii. Selected pollinations saved to produce S_2 seed.

Summer 1982 - S_2 ear rows seed grown in Grand Island. Selected pollinations saved to produce S_3 seed.

Summer 1983 - S_3 ear rows seed grown in Grand Island. Selected pollinations saved to produce S_4 seed.

Summer 1984 - S_4 ear rows seed grown in Grand Island. Selected Pollinations saved to produce S_5 seed.

Summer 1985 - Three ear rows of S_5 seed grown at Grand Island. One row saved and bulked for seed.

Summer 1986 - Three rows from bulk seed grown at Grand Island. Selected ears from all three rows bulked.

Summer 1987 - One row increase at Grand Island.

NQ508 named in 1988

Exhibit A - Response

The selection criteria used represents the breeder's preference to select progeny for plants and ears that are generally less diseased than others, have acceptable agronomic characteristics such as resistance to lodging and have the ability to make a good female and/or male parent in a hybrid production field. No specific standards are used and selection criteria depends upon a breeder's personal preference for plant, ear and kernel characteristics.

NQ508 appears stable and uniform after 8 generations of selfing. No off-type has been exhibited in evaluation.

Dent Corn
NQ508

Exhibit B - Statement of Novelty

"NQ508" is most similar to OQ603. However, "NQ508" differs in that it silks and matures 4 days later than OQ603. "NQ508" is 12cm taller than OQ603. Ear Height on "NQ508" is 13cm higher than OQ603. The top ear internode on "NQ508" is 3cm less than OQ603. The ear node leaf is the same width for "NQ508" and OQ603, but the "NQ508" ear node leaf length is 11cm shorter. The tassel of "NQ508" is more open than OQ603 and the peduncle length is 2cm shorter than OQ603. "NQ508" has dark pink anther color and a green glume color as compared to purple anther and glume color for OQ603.

Exhibit B - Raw Data

9200061

NQ508 (1991)	REPETITIONS										
Tassel Tip Height	71.00	73.00	69.50	71.00	69.00	71.00	71.00	70.00	73.00	69.00	IN
Ear Height	35.00	39.00	39.00	37.00	40.00	41.00	38.00	36.00	35.00	38.00	IN
Internode Length	3.50	3.75	4.50	4.25	4.25	3.00	3.50	4.25	4.50	5.25	IN
Earnode Leaf Widest Pt.	2.75	3.00	3.00	3.00	3.00	3.50	3.25	3.00	3.00	3.00	IN
Earnode Leaf Length	22.75	22.50	22.50	22.50	22.50	23.75	22.25	23.50	25.25	24.00	IN
# of Leaves	12.00	13.00	13.00	13.00	13.00	10.00	10.00	11.00	11.00	12.00	
# Lateral Branches	5.00	4.00	5.00	6.00	5.00	5.00	6.00	6.00	6.00	8.00	
Peduncle Length	1.50	2.00	1.50	1.75	1.50	1.25	2.00	2.00	2.00	2.25	IN
Shank Length	4.25	5.50	4.00	4.00	5.00	5.00	4.00	4.50	4.50	5.00	IN
# Shank Internodes	5.00	6.00	5.00	5.00	4.00	5.00	5.00	6.00	6.00	4.00	
Ear Length	5.50	4.50	5.50	5.00	5.00	5.00	4.50	5.00	5.00	5.00	IN
Ear Diameter-Midpoint	37.00	38.00	38.00	38.00	38.00	37.00	36.00	39.00	38.00	38.00	MM
Ear Weight	87.00	71.00	52.00	62.00	68.00	61.00	67.00	63.00	60.00		GM
# of Rows	12.00	12.00	12.00	14.00	12.00	12.00	12.00	12.00	14.00	12.00	
Kernel Length	10.00	10.00	11.00	11.00	11.00	11.00	11.00	10.00	10.00	10.00	MM
Kernel Width	10.00	9.00	9.00	10.00	9.00	9.00	9.00	10.00	10.00	9.00	MM
Kernel Thickness	6.00	6.00	7.00	5.00	7.00	6.00	6.00	6.00	5.00	6.00	MM
Weight/100 kernels	34.00	34.40	26.20	30.00	22.80						GM
Cob Diameter-Midpoint	24.00	25.00	25.00	25.00	24.00	24.00	24.00	25.00	25.00	24.00	MM

CONTROL 00603 (1991)	REPETITIONS										
Tassel Tip Height	68.00	68.00	67.00	68.00	67.00	65.00	63.50	64.00	65.00	65.50	IN
Ear Height	34.00	31.00	35.00	31.00	31.00	33.00	33.00	34.00	30.00	33.00	IN
Internode Length	4.25	4.50	5.00	5.25	5.00	4.50	4.75	5.00	5.50	5.75	IN
Earnode Leaf Widest Pt.	3.00	2.75	2.75	2.75	2.75	2.50	3.00	2.75	2.75	3.00	IN
Earnode Leaf Length	28.00	28.00	26.00	27.25	26.00	28.50	26.00	27.00	30.00	27.25	IN
# of Leaves	11.00	12.00	11.00	11.00	12.00	11.00	10.00	10.00	10.00	11.00	
# Lateral Branches	5.00	6.00	7.00	6.00	9.00	6.00	7.00	7.00	8.00	9.00	
Peduncle Length	0.75	0.75	1.25	1.25	1.25	1.25	1.50	1.50	1.50	1.75	IN
Shank Length	8.00	9.00	10.00	9.50	9.50						CM
# Shank Internodes	4.00	4.00	5.00	4.00	6.00						
Ear Length	4.50	4.50	4.75	5.25	4.25						IN
Ear Diameter-Midpoint	35.00	35.00	37.00	36.00	33.00						MM
Ear Weight	65.10	82.10	80.90	70.40	52.60						GM
# of Rows	12.00	12.00	14.00	12.00	12.00						
Kernel Length	9.00	9.00	10.00	9.00	10.00						MM
Kernel Width	8.00	8.00	9.00	8.00	8.00						MM
Kernel Thickness	4.00	4.00	4.00	4.00	4.00						MM
Weight/100 kernels	25.80	26.70	24.80	26.40	20.90						GM
Cob Diameter-Midpoint	26.00	28.00	25.00	27.00	25.00						MM

Exhibit B - Means and Comparisons

9200061

NQ508 (1991)	MEAN		STD DEV		t STAT	t.05 CONF LVL
Tassel Tip Height	179.71	CM	3.65	CM	6.237	2.101
Ear Height	96.01	CM	5.19	CM	6.053	2.101
Internode Length	10.35	CM	1.64	CM	3.289	2.101
Earnode Leaf Widest Pt.	7.75	CM	0.50	CM	2.967	2.101
Earnode Leaf Length	58.80	CM	2.44	CM	7.967	2.101
# of Leaves	11.80		1.23		1.883	2.101
# Lateral Branches	5.60		1.07		2.452	2.101
Peduncle Length	4.51	CM	0.82	CM	3.297	2.101
Shank Length	11.62	IN	1.34	CM	3.490	2.160
# Shank Internodes	5.10		0.74		1.071	2.160
Ear Length	12.70	CM	0.85	CM	1.703	2.160
Ear Diameter-Midpoint	37.70	MM	0.82	MM	3.903	2.160
Ear Weight	65.67	GM	9.70	GM	0.710	2.110
# of Rows	12.40		0.84		0.000	2.160
Kernel Length	10.50	MM	0.53	MM	3.501	2.160
Kernel Width	9.40	MM	0.52	MM	4.125	2.160
Kernel Thickness	6.00	MM	0.67	MM	6.245	2.160
Weight/100 kernels	29.48	GM	5.01	GM	1.647	2.306
Cob Diameter-Midpoint	24.50	MM	0.53	MM	3.332	2.160

CONTROL OQ603 (1991)	MEAN		STD DEV	
Tassel Tip Height	167.89	CM	4.35	CM
Ear Height	82.55	CM	4.19	CM
Internode Length	12.57	CM	1.19	CM
Earnode Leaf Widest Pt.	7.11	CM	0.40	CM
Earnode Leaf Length	69.60	CM	3.25	CM
# of Leaves	10.90		0.74	
# Lateral Branches	7.00		1.33	
Peduncle Length	3.24	CM	0.82	CM
Shank Length	9.20	CM	0.76	CM
# Shank Internodes	4.60		0.89	
Ear Length	11.81	CM	0.96	CM
Ear Diameter-Midpoint	35.20	MM	1.48	MM
Ear Weight	70.22	GM	12.16	GM
# of Rows	12.40		0.89	
Kernel Length	9.40	MM	0.55	MM
Kernel Width	8.20	MM	0.45	MM
Kernel Thickness	4.00	MM	0.00	MM
Weight/100 kernels	24.92	GM	2.36	GM
Cob Diameter-Midpoint	26.20	MM	1.30	MM

9200061

NQ508 (1992) REPETITIONS

Tassel Tip Height	86.00	87.00	84.00	89.00	92.00	86.00	86.00	86.00	85.00				IN
Ear Height	37.00	40.00	37.00	39.00	40.00	44.00							IN
Internode Length	4.50	5.50	5.00	6.50	5.50	5.50	6.50	6.00	5.00				IN
Earnode Leaf Widest Pt.	4.00	4.00	3.00	4.00	4.50	4.00							IN
Earnode Leaf Length	25.00	28.00	26.00	36.00	34.00	33.00							IN
# of Leaves	11.00	9.00	11.00	13.00	11.00	12.00							
# Lateral Branches	6.00	6.00	5.00	5.00	6.00	6.00	5.00	7.00	6.00				
Peduncle Length	4.50	4.50	3.00	3.00	3.00	3.00	3.00	3.50	4.50				IN
Shank Length	13.00	13.00	11.00	13.00	12.50	12.00	10.00	22.50	13.00	18.00	12.00	18.50	CM
	13.50	12.00											CM
# Shank Internodes	5.00	5.00	7.00	6.00	6.00	6.00	7.00	8.00	8.00	9.00	7.00	6.00	
	8.00	7.00											
Ear Length	12.50	11.00	12.00	13.00	14.00	13.00	12.50	12.50	13.00	13.00	13.00	13.00	CM
	13.00	14.50	13.00	14.00	14.00								CM
Ear Diameter-Midpoint	4.00	4.00	3.50	4.00	4.00	4.50	4.00	4.50	4.50	4.00	4.00	4.00	CM
	4.00	5.00	4.00	4.00	4.00								CM
Ear Weight	54.70	80.50	72.70	97.30	87.10	104.10	108.90	105.90	99.90	102.70	100.00	116.80	GM
	100.00	107.90	114.60	102.30	114.50								GM
# of Rows	14.00	12.00	14.00	12.00	14.00	12.00	12.00	12.00	16.00	14.00	12.00	12.00	
	12.00	12.00											
Kernel Length	13.00	13.00	11.00	11.00	13.00	10.00	10.00	12.00	12.00	12.00	12.00	11.00	MM
Kernel Width	10.00	9.00	9.00	8.00	10.00	9.00	9.00	9.00	9.00	10.00	9.00	9.00	MM
Kernel Thickness	5.00	5.00	6.00	6.00	6.00	6.00	7.00	5.00	6.00	6.00	7.00	7.00	MM
Weight/100 kernels	35.30	37.70											GM
Cob Diameter-Midpoint	26.00	26.00	25.00	27.00	28.00	27.00	28.00	27.00	23.00	26.00	30.00	30.00	MM

CONTROL
OQ603 (1992) REPETITIONS

Tassel Tip Height	72.00	75.00	75.00	69.00	68.00	68.00	64.00	63.00	63.00				IN
Ear Height	35.00	36.00	37.00	35.00	27.00	30.00							IN
Internode Length	5.00	6.00	6.00	5.50	5.00	5.00	5.50	4.50	6.00				IN
Earnode Leaf Widest Pt.	3.50	4.00	4.00	3.00	3.50	3.50							IN
Earnode Leaf Length	30.00	29.00	31.00	29.00	31.00	31.00							IN
# of Leaves	10.00	10.00	9.00	11.00	10.00	11.00							
# Lateral Branches	7.00	5.00	10.00	8.00	5.00	6.00	6.00	6.00	7.00				
Peduncle Length	2.00	3.00	2.50	1.50	2.50	3.00	1.50	2.50	2.00				IN
Shank Length	9.50	9.50	12.00	6.00	8.00	11.00	9.00	11.50	16.00	9.00	10.00	11.50	CM
# Shank Internodes	6.00	6.00	6.00	6.00	5.00	4.00	6.00	6.00	6.00	7.00	5.00	6.00	
Ear Length	13.50	13.00	10.00	14.50	14.50	13.00	13.50	14.00	15.50	13.50	13.50	14.50	CM
	15.00	14.00	13.50										CM
Ear Diameter-Midpoint	4.00	4.00	4.00	4.00	4.00	3.50	4.00	4.00	4.00	4.50	4.00	4.50	CM
Ear Weight	81.60	35.80	101.50	113.80	90.60	106.30	96.80	118.50	115.80	82.90	90.20	124.10	GM
	95.80	104.00	84.90										GM
# of Rows	12.00	12.00	12.00	14.00	14.00	12.00	14.00	14.00	12.00	14.00	12.00	12.00	
	14.00	12.00	12.00										
Kernel Length	10.00	9.00	11.00	11.00	11.00	11.00	10.00	11.00	10.00	11.00			MM
Kernel Width	8.00	8.00	8.00	9.00	8.00	9.00	8.00	9.00	8.00	9.00			MM
Kernel Thickness	7.00	6.00	6.00	5.00	5.00	5.00	5.00	5.00	6.00	5.00			MM
Weight/100 kernels	20.90	24.00											GM
Cob Diameter-Midpoint	24.00	26.00	25.00	24.00	28.00	25.00	24.00	26.00	27.00	25.00			MM

Exhibit B - Means and Comparisons

9200061

NQ508 (1992)	MEAN		STD DEV		t STAT	t.05 CONF LVL
Tassel Tip Height	220.42	CM	6.06	CM	9.745	2.120
Ear Height	100.33	CM	6.57	CM	2.929	2.228
Internode Length	14.11	CM	1.73	CM	0.539	2.120
Earnode Leaf Widest Pt.	9.95	CM	1.25	CM	1.204	2.228
Earnode Leaf Length	77.05	CM	11.66	CM	0.079	2.228
# of Leaves	11.17		1.33		1.464	2.228
# Lateral Branches	5.78		0.67		1.465	2.120
Peduncle Length	9.03	CM	1.85	CM	3.926	2.120
Shank Length	13.86	CM	3.42	CM	2.919	2.064
# Shank Internodes	6.79		1.19		2.501	2.064
Ear Length	13.00	CM	0.83	CM	1.825	2.042
Ear Diameter-Midpoint	4.12	CM	0.33	CM	0.641	2.052
Ear Weight	98.23	GM	16.22	GM	0.299	2.042
# of Rows	12.86		1.29		0.128	2.052
Kernel Length	11.67	MM	1.07	MM	2.809	2.086
Kernel Width	9.17	MM	0.58	MM	3.101	2.086
Kernel Thickness	6.00	MM	0.74	MM	1.537	2.086
Weight/100 kernels	36.50	GM	1.70	GM	5.068	4.303
Cob Diameter-Midpoint	26.92	MM	1.98	MM	1.964	2.086

CONTROL OQ603 (1992)	MEAN		STD DEV	
Tassel Tip Height	174.13	CM	11.99	CM
Ear Height	84.67	CM	9.99	CM
Internode Length	13.69	CM	1.39	CM
Earnode Leaf Widest Pt.	9.10	CM	0.96	CM
Earnode Leaf Length	76.62	CM	2.50	CM
# of Leaves	10.17		0.75	
# Lateral Branches	6.67		1.58	
Peduncle Length	5.79	CM	1.44	CM
Shank Length	10.25	CM	2.47	CM
# Shank Internodes	5.75		0.75	
Ear Length	13.70	CM	1.25	CM
Ear Diameter-Midpoint	4.04	CM	0.26	CM
Ear Weight	96.17	GM	21.37	GM
# of Rows	12.80		1.01	
Kernel Length	10.50	MM	0.71	MM
Kernel Width	8.40	MM	0.52	MM
Kernel Thickness	5.50	MM	0.71	MM
Weight/100 kernels	22.45	GM	2.19	GM
Cob Diameter-Midpoint	25.40	MM	1.35	MM

Formula Used to Calculate Standard Deviation:

$$Standard\ Deviation = \sqrt{\frac{\Sigma (V_i - \overline{x})^2}{N-1}}$$

$\overline{x}$ = sample mean
N = sample size
V_i = the ith item

Formula Used to Calculate t Statistic:

$$S^2\ Pooled = \frac{(N_1-1)(SD_1)^2 + (N_2-1)(SD_2)^2}{(N_1+N_2-2)}$$

$$S\ Pooled = \sqrt{S^2\ Pooled}$$

$$t\ Statistic = \frac{\overline{x}_1 - \overline{x}_2}{S\ Pooled \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

$\overline{x}$ = sample mean
SD = standard deviation
N = sample size

* t Statistic compared to value at t.05 confidence level.
* Measurements taken in inches are converted to centimeters using a conversion factor of 2.54.

Formula Used to Calculate Heat Units:

$$U.S.\ Heat\ Units\ (Growing\ Degree\ Days) = \frac{Tmax + Tmin}{2} - 50°F$$

Tmax = Maximum Daily Temperature. If Tmax is greater than 86 degrees F, then Tmax is equal to 86 degrees F.
Tmin = Minimum Daily Temperature. If Tmin is less than 50 degrees F, then Tmin is equal to 50 degrees F.

9200061

ADDITIONAL PLANT DESCRIPTION INFORMATION
FOR COMPARISION OF N0508 VS 00603
1992 DATA

PEDIGREE	DAYS TO 50% SILK	HEAT UNITS TO 50% SILK	SHEATH PUBESCENCE	KERNEL ROW DISTINCTNESS	KERNEL ROW STRAIGHTNESS	FRESH HUSK COLOR	DRY HUSK COLOR	HUSK EXTENSION	EAR POSITION (AT DRY HUSK)	COB STRENGTH	COB COLOR
N0508	58	1461 accum.	Light	Distinct	Straight	Lt. Green	Buff	Medium	Upright	Strong	Red
00603	55	1405 accum.	Medium	Distinct	Straight	Lt. Green	Buff	Medium	Upright	Strong	Pink

Please add the above characteristics to the '00603' official description as well as the disease data also enclosed. Also, please make the following change in the official description of '00603': Endosperm color is yellow.

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

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT
(Corn)

OBJECTIVE DESCRIPTION OF VARIETY

CORN (ZEA MAYS)

NAME OF APPLICANT(S)
United AgriSeeds, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
103 Tomaras Ave.
Savoy, Il 61874

FOR OFFICIAL USE ONLY
PVPO NUMBER 9200061
VARIETY NAME OR TEMPORARY DESIGNATION
NQ508

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)

[5][8] DAYS FROM EMERGENCE TO 50% OF PLANTS IN SILK [1][4][2][1] HEAT UNITS
[ ][ ] DAYS FROM 50% SILK TO OPTIMUM EDIBLE QUALITY [ ][ ][ ][ ] HEAT UNITS
[ ][ ] DAYS FROM 50% SILK TO HARVEST AT 25% KERNEL MOISTURE [ ][ ][ ][ ] HEAT UNITS

4. PLANT:

[1][8][0] CM. HEIGHT (To tassel tip) [0][9][6] CM. EAR HEIGHT (To base of top ear

[1][0] 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:

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

Cytoplasm Type:

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

5. LEAF (Field Corn Inbred Examples Given):

Color:

[2] 1 = LIGHT GREEN (HY) 2 = MEDIUM GREEN (WF9) 3 = DARK GREEN (B14) 4 = VERY DARK GREEN (K16

Angle from Stalk (Upper half):

[3] 1 = < 30° 2 = 30–60° 3 = > 60°

Sheath Pubscence:

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

Marginal Waves:

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

Longitudinal Creases:

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

Width:

[0][8] CM. WIDEST POINT OF EAR NODE LEAF

Length:

[0][5][9] CM. EAR NODE LEAF

[1][2] NUMBER OF LEAVES PER MATURE PLANT

6 TASSEL:

[0 6] NUMBER OF LATERAL BRANCHES

Branch Angle from Central Spike:

[3] 1 = < 30° 2 = 30–40° 3 = > 45°

Peduncle Length:

[0 5] CM. FROM TOP LEAF TO BASAL BRANCHES

Pollen Shed:

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

[6] Anther Color: } 1 = YELLOW 2 = PINK 3 = RED 4 = PURPLE 5 = GREEN
[5] Glume Color: } 6 = OTHER (Specify) Dark Pink

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

[ ] "T" [ ] "S" [ ] "C" [ ] OTHER (Specify Cytoplasm and degrees of restoration) _____

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

[1 3] CM LENGTH [3 8] MM. MID-POINT DIAMETER [6 6] GM. WEIGHT

JMS 2/9/93

Kernel Rows:

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

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

RECEIVED
USDA AMS
JAN 7 - 1992
Plant Variety
Protection Ofc.

Silk Color (Exposed at Silking Stage):

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

Husk Color:

[1] FRESH } 1 = LIGHT GREEN 2 = DARK GREEN 3 = PINK
[6] DRY } 4 = RED 5 = PURPLE 6 = BUFF

Husk Extention: (Harvest Stage)

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

Husk Leaf:

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

Shank:

JMS 2/9/93

[1 2] CM LONG [5] NO. OF INTERNODES

Position at Dry Husk Stage:

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

Taper:

[2] 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):

JMS 2/9/93

[1 1] MM LONG [0 9] MM. WIDE [0 6] MM. THICK

Shape Grade (% Rounds)

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

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8. KERNEL (Dried):

JMS 2/9/93

[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) _____

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

[3] 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][9] GM. WEIGHT /100 SEEDS (Unsized Sample)

JMS 2/9/93

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):

JMS 2/9/93

- [ ] STALK ROT (Diplodia)
- [ ] STALK ROT (Fusarium)
- [ ] STALK ROT (Gibberella)
- [1] NORTHERN LEAF BLIGHT
- [1] SOUTHERN LEAF BLIGHT
- [ ] SMUT
- [ ] SOUTHERN RUST
- [ ] CORN SMUT
- [ ] BACTERIAL WILT
- [ ] BACTERIAL LEAF BLIGHT
- [ ] MAIZE DWARF MOSAIC
- [ ] STUNT
- [ ] OTHER (Specify)

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

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

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

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

REFERENCES:

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

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COMMENTS:

Exhibit E
Statement of the Basis of Applicants Ownership

The variety NQ508, for which Plant Variety Protection is being sought, was developed by breeders employed by United AgriSeeds, Inc. of Savoy, Illinois. United AgriSeeds, Inc. believes it is the sole, original, and first breeder of the NQ508 variety of dent corn for which it solicits a certificate of protection.