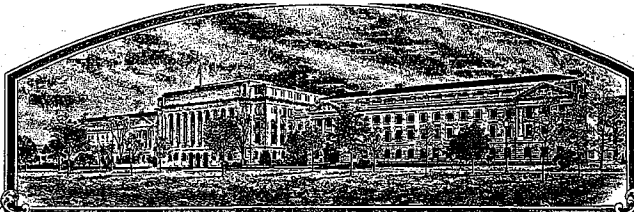


No.

200100270



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

The J. C. Robinson Seed Company

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

CORN, FIELD

'W60028'

*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 tenth day of April, in the year two thousand three.*

Attest:

Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture



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

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 FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement 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)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
The J.C. Robinson Seed Company			W60028
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		6. TELEPHONE (include area code)	<b>FOR OFFICIAL USE ONLY</b> PVPO NUMBER <b>200100270</b>
100 JC Robinson Blvd. PO Box A Waterloo, Nebraska 68069		6. FAX (include area code)	
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)	FILING DATE Sept. 5, 2001	
Zea Maize E.	Gramineae	FILING AND EXAMINATION FEE: \$ 2450.00 + 255.00 DATE 9/5/01 + 4/3/02	
9. CROP KIND NAME (Common name)		CERTIFICATION FEE: \$ 320.00 + 28.00 DATE 3/10/03	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION		
Nebraska	8/01/1964		
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
Alan R. Grunst Research Operations Coordinator 120 South 32nd Street West Des Moines, Iowa 50265			(515) 267-1633
			15. FAX (include area code)
			(515) 267-1176
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,460), 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)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> 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?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> 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)		NAME (Please print or type)	
Alan R. Grunst		Alan R. Grunst	
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Research Operatons Coor#dinator	9/5/01		

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 D TECHNOLOGY DIVISION - PLANT VARIETY PROTECT

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 OWNER  JC Robinson Seeds		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME  <b>W60028</b>
4. ADDRESS (Street and No., R.F.D. No., City, State, and ZIP Code, and Country)  100 JC Robinson Blvd. PO Box A Waterloo, Nebraska 68069		5. TELEPHONE (include area code)  (800) 228-9906	<div style="background-color: black; color: white; padding: 2px; font-weight: bold;">FOR OFFICIAL USE ONLY</div> PVPO NUMBER <b>200100270</b>  FILING DATE <b>Sept. 5, 2001</b>
		6. FAX (include area code)  (402) 779-2910	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)  Corporation	8. IF INCORPORATED, GIVE STATE OF INCORPORATION  Nebraska	9. DATE OF INCORPORATION  8/01/1964	FILING AND EXAMINATION FEE: \$ 2450.00 + 255.00  DATE 9/5/01 + 4/3/02  CERTIFICATION FEE: \$  DATE
10. NAME AND ADDRESS OF REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION. (First person listed will receive all papers)  Alan R. Grunst Research Operations Coordinator 120 South 32nd Street West Des Moines, Iowa 50265			
11. TELEPHONE (include area code)  (515) 267-1633	12. FAX (include area code)  (515) 267-1167	13. FAX  AGRUNST@JCROB.COM	14. CROP KIND NAME (Common name)  Corn
15. GENUS AND SPECIES NAME  Zea Mays L.	16. FAMILY NAME (Botanical)  Gramineae	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act) <input type="checkbox"/> YES (If "yes", answer items 20 and 21 below) <input checked="" type="checkbox"/> NO (If "no", go to item 22)	
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional). e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> 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. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,705), made payable to "Treasurer of the United States" (Mail to Plant Variety Protection Office)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
22. HAS THE VARIETY (INCLUDING AND HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO  IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input type="checkbox"/> NO IF YES, SPECIFY THE <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED NUMBER 1, 2, 3, etc.  (If additional explanation is necessary, please use the space indicated on the reverse)	
23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO  IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse)		24. 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))  <i>signature is on original application form</i>		SIGNATURE OF APPLICANT (Owner(s))	
NAME (Please print or type)  Alan R. Grunst		NAME (Please print or type)	
CAPACITY OR TITLE  Research Operations Coordinator		CAPACITY OR TITLE	
DATE  9/5/01		DATE	

2  
 THIS 10/1/01

## INSTRUCTIONS

**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) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, 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 an approved public repository; (4) check drawn on a U.S. bank for \$2,705 (\$320 filing fee and \$2,385 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 unfilled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 401, NAL Building, 10301 Baltimore Avenue, 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 \$320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

**Plant Variety Protection Office**  
**Telephone: (301) 504-5518**  
**FAX: (301) 504-5291**

**Homepage:** <http://www.ams.usda.gov/science/pvpo/pvp.htm>

## ITEM

- 18a. 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
- 18b. 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; and  
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.
- 18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.
- 18d. 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.
- 18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.
19. 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 labeled, 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).
22. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
23. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

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**21. CONTINUED FROM FRONT** (Please provide a statement as to the limitation and sequence of generations that may be certified.)

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~~**22. CONTINUED FROM FRONT** (Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)~~

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**23. CONTINUED FROM FRONT** (Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)

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**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 or owner's representative 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 or any modification of owner's name 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 the Regulations and Rules of Practice.)

**To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority. For example, for agricultural and vegetable crops, contact: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center--East, Beltsville, MD 20705. Telephone: (301) 504-8089. <http://www.ams.usda.gov/lsg/seed.htm>**

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to complete this information collection is estimated to average 3.0 hours 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

S&T-470 (07-01) designed by the Plant Variety Protection Office with WordPerfect 9.0. Replaces STD-470 (04-01) which is obsolete.

## Origin and Breeding History of W60028

## Exhibit A:

W60028 is a corn inbred line developed from the single cross of LHE136/SR108 using the pedigree method of breeding. Selfing and selection were conducted eight generations in its development. The selection criteria used in the development of W60028 included: grain yield, high plant density tolerance, good stand establishment, silking and pollen shedding ability, stalk and root strength, stay green appearance during senescence, seed quality, and disease tolerance. Testcrosses with unrelated inbreds were made and evaluated over multiple years and locations in the promotion of W60028 to commercial status in hybrid combination.

SR108, a progenitor of W60028, is a proprietary field corn inbred of The J. C. Robinson Seed Company. SR108 was developed from the population LH132/Mexican population. LH132 is a commercial inbred line developed by Holden's Foundation Seeds, Inc. and has a PVP number of 8300148. LHE136, a progenitor of W60028, is a commercial field inbred line developed by Holden's Foundation Seeds, Inc.

W60028 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 for eight generations, with careful attention given to uniformity of plant type to ensure homozygosity and phenotypic purity. During the advanced stages of development, hand-pollinated increases of W60028 were observed by the developing breeder to assure stability and uniformity of the inbred line for at least three generations as an inbred as well as in hybrid combinations. No variant traits have been observed or are expected in W60028.

## Development history of W60028:

<u>Location/Season/Year</u>	<u>Inbreeding Level</u>	<u>Pedigree/Ear Id.</u>
Henrietta/Summer/1992	S0 self	LHE136/SR108)-X
Hawaii/Fall/1993	S1 self & select	LHE136/SR108)-X-002
Henrietta/Summer/1994	S2 self & select	LHE136/SR108)-X-002-2
Henrietta/Summer/1995	S3 self & select	LHE136/SR108)-X-002-2-1
Henrietta/Summer/1996	S4 self & select	LHE136/SR108)-X-002-2-1-1
Elk City/Summer/1997	S5 self & select	LHE136/SR108)-X-002-2-1-1-1
Puerto Rico/Winter/1997-98	S6 self & select	LHE136/SR108)-X-002-2-1-1-1-1
Elk City/Summer/1998	S7 self & select	LHE136/SR108)-X-002-2-1-1-1-1-1
Puerto Rico/Winter/1998-99	S8 self & initial bulk	LHE136/SR108)-X-002-2-1-1-1-1-1-X

5MS 10/1/02  
Exhibit B.

W60028 most closely resembles B73.

The following color traits are uniquely different from the standard check:

Trait	W60028			B73		
	Number Value	Color	Munsel Code	Number Value	Color	Munsel Code
Silk Color	11	Pink	7.5YR8/4	5	Green-Yellow	2.5GY8/6
Cob Color	19	White	5Y9/1	14	Red	2.5R6/10

The following traits were observed to be different between the inbred and the standard check:

Trait	W60028		B73	
	Number Value	Description	Number Value	Description
Ear Taper	2	Average	1	Slight

The following traits are highly significant at the 1% level (Student's t-Test procedure) for each location analysis as well as the combined location analysis:

Trait	W60028			B73		Mean Diff	t-Value	Prob
	Loc	N	Mean	N	Mean			
Plant Height	1	15	246.8	15	236.2	10.6	2.99	0.0058
Plant Height	2	15	245.4	15	228.8	16.6	6.76	0.0000
Plant Height	Avg	30	246.1	30	232.5	13.6	6.10	0.0000
Leaves above top ear	1	15	6.6	15	5.5	1.1	4.88	0.0000
Leaves above top ear	2	15	5.7	15	5.3	0.5	2.79	0.0093
Leaves above top ear	Avg	30	6.2	30	5.4	0.8	4.91	0.0000
Ear Length	1	15	15.1	15	14.0	1.1	4.42	0.0001
Ear Length	2	15	15.2	15	13.5	1.7	6.48	0.0000
Ear Length	Avg	30	15.2	30	13.7	1.4	7.62	0.0000
Ear Weight	1	15	146.8	15	110.7	36.1	7.32	0.0000
Ear Weight	2	15	129.7	15	82.3	47.4	6.95	0.0000
Ear Weight	Avg	30	138.3	30	96.5	41.7	8.10	0.0000

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) <b>The J.C. Robinson Seed Company</b>	Variety Seed Source 9899PR 26,88	Variety Name or Temporary Designation W60028
Address (Street No., or R.F.D., City, State, Zip Code and Country) <b>100 J.C. Robinson Blvd., Waterloo, NE 68069 USA</b>		<u>FOR OFFICIAL USE</u> PVPO Number <b>200100270</b>

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=Varigated (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	W182BN	SG1533, 4722, HP301, HP7211
C103 Mo17, Va102, Va35, A682		
Oh43 A619, MS71, H99, Va26	White Dent	Pipecorn:
WF9 W64A, A554, A654, Pa91	CI66, H105, Ky228	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 B73 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 92nc ei01 2
3. MATURITY (In Region Best Adaptability: show Heat Unit formula in "Comments" section) DAYS HEAT UNITS * 062 1324.0 From emergence to 50% of plants in silk * 061 1275.5 From emergence to 50% plants in pollen 001 0031.0 From 10% to 90% pollen shed (* ) From 50% silk to optimum edible quality From 50% silk to harvest at 25% moistur	DAYS HEAT UNITS 059 1232.0 058 1184.5 001 0031.0
4. PLANT: * 246.1 cm Plant Height (to tassel tip) Standard Deviation 07.0 Sample Size 30 * 102.0 cm Ear Height (to base of top ear node) 12.4 30 014.3 cm Length of Top Ear Internode 01.5 30 0.0 Average Number of Tillers 00.0 30 1.0 Average Number of Ears per Stalk 00.0 15 * 3 Anthocyanin of Brace Roots: 1=Absent 2=Faint 3=Moderate 4=Dark 4	Standard Deviation Sample Size 232.5 10.1 30 099.9 12.4 30 014.8 01.5 30 0.0 00.0 30 1.0 00.0 15

Application Variety Data		W60028	Page 2		Standard Inbred Data		B73
5. LEAF			Standard Deviation	Sample Size	Standard Deviation		Sample Size
*	009.4 cm	Width of Ear Node Leaf	0.8	30	009.8	1.0	30
*	087.8 cm	Length of Ear Node Leaf	5.4	30	081.8	5.8	30
*	06	Number of leaves above top ear	0.7	30	05	0.5	30
	016	Degrees Leaf Angle (measure from 2nd leaf above ear at anthesis to stalk above leaf)	4.4	30	014	3.2	30
*	03	Leaf Color (Munsel code)	5GY3/4		05	(Munsel code)	2.5GY8/6
	8	Leaf Sheath Pubescence (Rate on scale from 1=none to 9=like peach fuzz)			6		
	8	Marginal Waves (Rate on scale from 1=none to 9=man)			7		
	4	Longitudinal Creases (Rate on scale from 1=none to 9=many)			3		
6. TASSEL:			Standard Deviation	Sample Size	Standard Deviation		Sample Size
*	08	Number of Primary Lateral Branches	01.9	30	07	02.7	30
	022	Branch Angle from Central Spike	06.0	30	021	08.6	15
*	40.9 cm	Tassel Length (from top leaf collar to tassel tip)	04.3	30	39.0	03.7	30
	5	Pollen Shed (Rate on scale from 0=male sterile to 9=heavy shed)			5		
	05	Another Color (Munsel code)	2.5GY8-10		07	(Munsel code)	5Y8/8
	02	Glume Color (Munsel code)	5GY5/4		02	(Munsel code)	5GY5/6
	1	Bar Glumes (Glume Bands): 1=Absent 2=Present			1		
7a. EAR (Unhusked Data):							
	11	Silk Color (3 days after emergence) (Munsel code)		7.5YR8/4	05	(Munsel code)	2.5GY8/6
	02	Fresh Husk Color (25 days after 50% silking) (Munsel code)		5GY6/6	02	(Munsel code)	5GY6/6
	21	Dry Husk Color (65 days after 50% silking) (Munsel code)		2.5Y8/8	21	(Munsel code)	2.5Y8/8
	1	Position of Ear at Dry Husk Stage: 1=Upright 2=Horizontal 3=Pendant			1		
	2	Husk Tightness (Rate on scale from 1=very loose to 9=very tight)			1		
	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 Ea)			Standard Deviation	Sample Size	Standard Deviation		Sample Size
	15.2 cm	Ear Length	00.7	30	13.7	00.8	30
	43.7 mm	Ear Diameter at	01.7	30	42.7	02.3	30
	138.3 gm	Ear Weight	15.4	30	096.5	23.7	30
	17	Number of Kernel Row	01.7	30	17	01.5	30
	2	Kernel Rows: 1=Indistinct			2		
	1	Row Alignment: 1=Straight 2=Slightly Curved 3=Spiral			1		
	06.7 cm	Shank Length	01.6	30	08.5	03.8	30
	2	Ear Taper: 1=Slight 2=Average 3=Extre			1		
Application Variety Data		Standard Inbred Data					

Note: Use chart on first page to choose color code



Application Variety Data		W60028	Page 3	Standard Inbred Data		B73
8. KERNEL (Dried)		Standard Deviation	Sample Size	Standard Deviation	Sample Size	
	11.3 mm Kernel Length	00.6	30	11.0	00.7	30
	06.9 mm Kernel Width	00.5	30	07.4	00.5	30
	04.4 mm Kernel Thickness	00.5	30	04.7	00.6	30
	29.2 % Round Kernels (Shape Grade)	14.6	29	54.1	15.0	28
	Aleurone Color Pattern: 1=Homozygous 2=Segregating					
(*)	18 Aleurone Color (Munsell code)	COLORLESS		18 (Munsell code)	COLORLESS	
*	07 Hard Endosperm Color (Munsell code)	2.5Y8/8		07 (Munsell code)	2.5Y8/8	
*	03 Endosperm Type: 1=Sweet (sul) 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
	25.9 gm Weight per 100 Kernels (unsized sample)	02.5	29	28.4	02.1	28
9. COB		Standard Deviation	Sample Size	Standard Deviation	Sample Siz	
*	25.0 mm Cob diameter at mid-point	04.4	30	27.3	01.5	30
	19 Cob Color (Munsell code)	5Y9/1		14 (Munsell code)	2.5R6/10	
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 Infect						
Anthracnose Leaf Blight ( <i>Colletotrichum graminicola</i> )						
Common Rust ( <i>Puccinia sorghi</i> )						
Common Smut ( <i>Ustilago maydis</i> )						
Eyespot ( <i>Kabatiella zeae</i> )						
Goss's Wilt ( <i>Clavibacter michiganese</i> spp. <i>nebraskense</i> )						
Gray Leaf Spot ( <i>Cercospora zeae-maydis</i> )						
Helminthosporium Leaf Spot ( <i>Bipolaris maydis</i> )					Race	Race
Northern Leaf Blight ( <i>Exserohilum turcicum</i> )					Race	Race
Southern Leaf Blight ( <i>Bipolaris maydis</i> )					Race	Race
Southern Rust ( <i>Puccinia polysora</i> )						
Stewart's Wilt ( <i>Erwinia stewartii</i> )						
Other (Specify) _____						
B. Systemic diseases						
Corn Lethal Necrosis (MCMV and MDMV)						
Head Smut ( <i>Sphacelotheca reiliana</i> )						
Maize Chlorotic Dwarf Virus (MCDV)						
Maize Chlorotic Mottle Virus (MCMV)						
Maize Dwarf Mosaic Virus (MDMV)					Strain	Strain
Sorghum Downy Mildew of Corn ( <i>Peronosclerospora sorghi</i> )						
Other (Specify) _____						
C. Stalk Rots						
Anthracnose Stalk Rot ( <i>Colletotrichum graminicola</i> )						
Diplodia Stalk Rot ( <i>Stenocarpella maydis</i> )						
Fusarium Stalk Rot ( <i>Fusarium moniliforme</i> )						
Gibberella Stalk Rot ( <i>Gibberella zeae</i> )						
Other (Specify) _____						
D. Ear and Kernel Rots						
Aspergillus Ear and Kernel Rot ( <i>Aspergillus flavus</i> )						
Diplodia Ear Rot ( <i>Stenocarpella maydis</i> )						
Fusarium Ear and Kernel Rot ( <i>Fusarium moniliforme</i> )						
Gibberella Ear Rot ( <i>Gibberella zeae</i> )						
Other (Specify) _____						
Application Variety Data				Standard Inbred Data		
Note: Use chart on first page to choose color codes for color traits.						

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

12. AGRONOMIC TRAITS:

5 Stay Green (at 65 days after anthesis) (Rate on a scale from 1=worst to 9=excellent)	4
00.0 % Dropped Ears (at 65 days after anthesis)	00.0
% Pre-anthesis Brittle Snapping	
%Pre-anthesis Root Lodging	
00.0 %Post-anthesis Root Lodging (at 65 days after anthesis)	03.0
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)

1 Isozyme      0 RFLP's      0 RAPD's

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## Exhibit D.

The following color traits are uniquely different from LH195 (an inbred of similar pedigree background):

Trait	W60028			LH195		
	Number Value	Color	Munsel Code	Number Value	Color	Munsel Code
Silk Color	11	Pink	7.5YR8/4	5	Green-Yellow	2.5GY8/6
Cob Color	19	White	5Y9/1	11	Pink	5R7/8

The following traits are highly significant at the 1% level (Student's t-Test procedure) for each location analysis as well as the combined location analysis:

Trait	W60028			LH195		Mean Diff	t-Value	Prob
	Loc	N	Mean	N	Mean			
Plant Height	1	15	246.8	15	182.4	64.4	21.27	0.0000
Plant Height	2	15	245.4	15	197.5	47.9	34.04	0.0000
Plant Height	Avg	30	246.1	30	190.0	56.1	25.94	0.0000
Ear Height	1	15	90.8	15	57.0	33.8	17.10	0.0000
Ear Height	2	15	113.1	15	64.3	48.8	30.03	0.0000
Ear Height	Avg	30	102.0	30	60.6	41.3	16.41	0.0000
Length of Top Ear Internode	1	15	15.1	15	10.7	4.4	8.50	0.0000
Length of Top Ear Internode	2	15	13.5	15	10.1	3.4	11.62	0.0000
Length of Top Ear Internode	Avg	30	14.3	30	10.4	3.9	11.86	0.0000
Leaf Length	1	15	90.6	15	79.5	11.1	6.61	0.0000
Leaf Length	2	15	84.9	15	72.2	12.7	18.88	0.0000
Leaf Length	Avg	30	87.8	30	75.8	11.9	9.64	0.0000
Ear Weight	1	15	146.8	15	104.3	42.5	11.04	0.0000
Ear Weight	2	15	129.7	15	97.9	31.9	6.36	0.0000
Ear Weight	Avg	30	138.3	30	101.1	37.2	10.51	0.0000
Shank Length	1	15	7.8	15	11.8	-4.0	-7.34	0.0000
Shank Length	2	15	5.7	15	8.0	-2.4	-5.08	0.0000
Shank Length	Avg	30	6.7	30	9.9	-3.2	-5.97	0.0000
Kernel Length	1	15	11.3	15	10.3	0.9	8.31	0.0000
Kernel Length	2	15	11.4	15	10.4	1.0	4.53	0.0001
Kernel Length	Avg	30	11.3	30	10.4	0.9	7.96	0.0000

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE

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)

**EXHIBIT E**  
**STATEMENT OF THE BASIS OF OWNERSHIP**

1. NAME OF APPLICANT(S)  The J.C. Robinson Seed Company	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME  W60028
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 100 JC Robinson Blvd. PO Box A Waterloo, Nebraska 68069	5. TELEPHONE (include area code)  (515) 267-1176	6. FAX (include area code)  (515) 267-1176
7. PVPO NUMBER  <b>200100270</b>		

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

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

10. Is the applicant the original owner?  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):  
 The variety for which Plant Variety Protection is hereby sought was developed by Calvin Treat, an employee of The J.C. Robinson Seed Company. By agreement between the employee and The J.C. Robinson Seed Company all rights to any invention, discovery, or development made by the employee while employed by The J.C. Robinson Seed Company are assigned to The J.C. Robinson Seed Company with no right of any kind retained by the employee.

**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 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.

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