

No.



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Monsanto Technology, LLC

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 purposes, 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.)

WHEAT, COMMON

'WB 523'

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 fifteenth day of March, in the year two thousand and ten.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 SCIENCE AND TECHNOLOGY - 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 OWNER Monsanto Technology, LLC		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME Bu6w00-523	3. VARIETY NAME WB 523
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) 800 North Lindbergh Blvd St. Louis, Missouri 63167		5. TELEPHONE (include area code) (406) 587-1218	FOR OFFICIAL USE ONLY PVPO NUMBER #200900446
		6. FAX (include area code) 406-586-8247	
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) Limited Liability Corp.	8. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware	9. DATE OF INCORPORATION 03/02/2000	

F E E S R E C E I V E D	FILING AND EXAMINATION FEES: \$ 4,382.00
	DATE 9/2/09
	CERTIFICATION FEE: \$ 768.00
	DATE 1/14/10

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Dr. Dale R. Clark WestBred 81 Timberline Drive Bozeman, MT 59718	
11. TELEPHONE (Include area code) 406-587-1218	12. FAX (Include area code) 406-586-8247
13. E-MAIL dclark@westbred.com	

14. CROP KIND (Common Name) Wheat	16. FAMILY NAME (Botanical) Poaceae	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
15. GENUS AND SPECIES NAME OF CROP Triticum aestivum	17. IS THE VARIETY A FIRST GENERATION HYBRID? <input checked="" type="checkbox"/> YES <input checked="" type="checkbox"/> NO	IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)		20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)
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 Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Owner's Ownership f. <input checked="" type="checkbox"/> Exhibit F. Declaration Regarding Deposit g. <input checked="" type="checkbox"/> Voucher Sample (3,000 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository) h. <input checked="" type="checkbox"/> Filing and Examination Fee (\$4,382), made payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office)		<input type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input checked="" type="checkbox"/> NO (If "no", go to item 23) <input type="checkbox"/> UNDECIDED
		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, WHICH CLASSES? <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED
		22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS. <input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO Sept 15, 2008 USA	24. 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, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. (Please use space indicated on reverse.)	IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)

25. The owners declare that a viable sample of basic seed of the variety has been 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 owner(s) is(are) the owner 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.

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

SIGNATURE OF OWNER Dale R. Clark for Monsanto Technologies		SIGNATURE OF OWNER	
NAME (Please print or type) Dale R. Clark		NAME (Please print or type)	
CAPACITY OR TITLE Director of Research	DATE Sept 1, 2009	CAPACITY OR TITLE	DATE

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GENERAL INSTRUCTIONS: 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, F; (3) for a tuber reproduced variety, 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; and (4) payment by credit card or check drawn on a U.S. bank for \$4,382 (\$518 filing fee and \$3,864 examination fee), payable to "Treasurer of the United States" (See Section 97.6 of the Regulations and Rules of Practice). **NEW:** With the application for a seed reproduced variety or by direct deposit soon after filing, the applicant must provide at least 3,000 viable untreated seeds of the variety *per se*, and for a hybrid variety at least 3,000 untreated seeds of each line necessary to reproduce the variety. Partial applications will be held in the PVPO for not more than 90 days; then returned to the applicant as un-filed. 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 payment by credit card or check payable to "Treasurer of the United States" in the amount of \$768 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

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. The fees for filing a change of address; owner's representative; 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.)

Plant Variety Protection Office
Telephone: (301) 504-5518 **FAX:** (301) 504-5291
General E-mail: PVPOmail@usda.gov
Homepage: <http://www.ams.usda.gov/science/pvpo/PVPindex.htm>

SPECIFIC INSTRUCTIONS:

To avoid conflict with other variety names in use, the applicant must check the appropriate recognized authority and **provide evidence** that the permanent name of the application variety (even if it is a parental, inbred line) has been cleared by the appropriate recognized authority before the Certificate of Protection is issued. For example, for agricultural and vegetable crops, contact: U.S. Department of Agriculture, Agricultural Marketing Service, Livestock and Seed Programs, **Seed Regulatory and Testing Branch**, 801 Summit Crossing Place, Suite C, Gastonia, North Carolina 28054-2193 Telephone: (704) 810-8870. <http://www.ams.usda.gov/lsg/seed.htm>.

ITEM

- 19a. 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
- 19b. 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 replicated 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.
- 19c. 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.
- 19d. 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.
- 19e. 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.
20. 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).
23. See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.
24. See Section 55 of the Act for instructions on claiming the benefit of an earlier filing date.

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

23. 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.)

Sept 15, 2009 USA

24. 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).)

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 1.4 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, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (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 to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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“WB 523”

Soft White Winter Wheat

19.a. Exhibit A. Origin and Breeding History

“WB 523” (exp. # BZ 6W00-523) is a soft white winter wheat that originated from the cross of “Malcolm/Madsen//Cashup”, made by WestBred, LLC near Bozeman, MT in 1996. The F1 was planted Bozeman, MT in Nov. 1996, and the F2 seed harvested in September 1997. F2 seed was planted in Oct. 1997 near Burley, ID. Heads were harvested from individual F2 plants and the F3 seed bulked and planted as an F3 population in the fall of 1998 near Bozeman, MT. Single heads were harvested from agronomically desirable plants and planted as single F4 rows near Burley, ID in October 1999. The F4 rows were observed for agronomic appearance (plant height, lodging resistance and shatter resistance). Agronomically desirable rows were harvested individually in August 2000, weighed and the grain tested for cookie/cracker/cake quality by measuring test weight, % protein, and SDS sedimentation. Seed from one such row was selected to be advanced and was given the experimental number “BU 6W00-523”. Yield trials, along with quality analysis for soft white wheat, were conducted on the F5 thru F11 generations in WestBred, LLC’s Pacific Northwest winter wheat trials. F8-F11 generation seed was tested in Washington, Idaho, and Oregon public trial from 2006 to present. Table 1 provides agronomic performance over three years at 21 locations. WB 523 was tested for quality at the Western Wheat Quality Lab and found to be acceptable for the soft white wheat market class (Table 2). Individual heads were harvested from the F7 plots and planted as head rows near Bozeman, MT in the fall of 2004. Uniform rows were harvested and planted in the fall of 2005 to produce Breeder Seed. Foundation seed was produced in 2006 and the name WB 523 was chosen for the variety. Registered seed was produced in 2007, and Certified seed was produced in 2008. The first unencumbered sale of WB 523 occurred September 15, 2008.

A tall variant that is 1-2 heads taller may occur at a frequency of up to 15 plants per 10,000 plants. Also, a red seed variant may occur at a frequency of up to 18 seed per 10,000 seed. Otherwise, no other variants are known to occur and “WB 523” is a stable and uniform variety in appearance and performance over several generations (F7-F11) and growing conditions.



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“WB 523”

Soft White Winter Wheat

19.b. Exhibit B. Statement of Distinctness

WB 523 is most similar to the variety Cashup. However, a waxy bloom is present on the stem of WB 523 whereas it is not present on Cashup. Also, the auricles of WB 523 have hairiness and Cashup does not. Also the glumes of WB 523 are oblique whereas those of Cashup are rounded, and, the seed of WB 523 is elliptical in shape, whereas that of Cashup is ovate.

The above comparisons, along with the complete Objective Description (Exhibit C) show WB 523 to be a novel variety of soft white winter wheat.

Table 1. Agronomic Performance of WB 456 and WB 523 compared to check varieties in WestBred's PNW trials 2005, 2006, 2007. (21 location average)

Variety	Plant Ht (inches)	Test Wt (lbs/bu)	% Protein	SDS (mm)	Yield in lbs/acre			
					2005	2006	2007	Mean
WB 456	35	62.1	11.5	37	8207	6919	7448	7525
WB 523	37	61.0	10.8	27	8026	7105	7560	7564
WestBred 470	36	61.2	11.3	60	6501	6485	7206	6731
WB-528	36	61.2	11.3	50	7843	6958	7572	7458
Tubbs	39	58.2	10.8	26	7699	7107	7554	7453
Stephens	36	58.3	11.3	29	7904	6542	6983	7143



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“WB 523”
Soft White Winter Wheat

Table 2. USDA/ARS Western Wheat Quality Lab data of WB 456 and WB 523 compared to check varieties grown in Washington State University Extension Trial - 2007.

<u>Variety</u>	<u>Location</u>	<u>TWT</u>	<u>WPROT</u>	<u>FYEL</u>	<u>MABS</u>	<u>MTYPE</u>	<u>CODI</u>
Stephens	Dayton	62.6	9.8	72.7	55.5	2M	9.51
Tubbs 06	Dayton	62.4	10.6	71.4	54.5	2M	9.23
WB 456	Dayton	63.8	11.1	71.6	53.4	2M	9.34
WB 523	Dayton	62.8	10.6	71.6	54.5	1M	9.70
Stephens	Harrington	61.8	8.6	72.0	51.5	2M	9.74
Tubbs 06	Harrington	60.9	9.3	71.4	54.6	2M	9.61
WB 456	Harrington	63.3	10.1	71.0	54.6	3M	9.59
WB 523	Harrington	62.4	9.8	70.3	52.7	2M	9.88
Stephens	Lind	61.0	12.3	71.1	55.8	1M	9.43
Tubbs 06	Lind	62.1	12.7	72.6	56.8	1M	9.10
WB 456	Lind	62.8	12.9	71.0	54.3	1H	9.19
WB 523	Lind	63.3	12.5	72.6	54.4	1H	9.35
Stephens	Mayview	61.8	10.6	71.7	54.7	2M	9.49
Tubbs 06	Mayview	62.0	9.8	71.9	55.6	2M	9.21
WB 456	Mayview	63.9	11.5	70.8	54.6	2M	9.35
WB 523	Mayview	63.5	9.4	71.4	51.8	2M	9.75
Stephens	Pullman	61.0	11.3	72.0	56.4	2M	9.34
Tubbs 06	Pullman	60.8	11.1	71.7	56.5	2M	9.50
WB 456	Pullman	61.4	11.5	71.8	57.7	2M	9.36
WB 523	Pullman	62.4	11.8	71.0	56.5	1M	9.57

TWT = Test Weight in lbs/bu

WPROT = % protein

FYEL = % flour yield

MABS = % Mix Water Absorption

MTYPE = Mixograph type

CODI = Cookie Diameter



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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

Exhibit C

**OBJECTIVE DESCRIPTION OF VARIETY
Wheat (*Triticum* spp.)**

NAME OF APPLICANT (S) Monsanto Tech., LLC	TEMPORARY OR EXPERIMENTAL DESIGNATION Bu 6w00-523	VARIETY NAME WB 523
ADDRESS (Street and No. or RD No., City, State, Zip Code and Country) 800 North Lindbergh Blvd St. Louis, Missouri 63167		FOR OFFICIAL USE ONLY PVPO NUMBER #200900446

PLEASE READ ALL INSTRUCTIONS CAREFULLY:

Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g., 0 9 9 or 0 9) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____ . Please answer all questions for your variety; lack of response may delay progress of your application.

1. KIND: <u>1</u> 1 = Common 2 = Durum 3 = Club 4 = Other (Specify) _____	2. VERNALIZATION: <u>2</u> 1 = Spring 2 = Winter 3 = Other (Specify) _____
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3. COLEOPTILE ANTHOCYANIN: <u>1</u> 1 = Absent 2 = Present	4. JUVENILE PLANT GROWTH: <u>1</u> 1 = Prostrate 2 = Semi-Erect 3 = Erect
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5. PLANT COLOR: (Boot Stage) <u>3</u> 1 = Yellow-Green 2 = Green 3 = Blue-Green	6. FLAG LEAF: (Boot Stage) <table border="0"> <tr> <td><u>1</u></td> <td>1 = Erect</td> <td>2 = Recurved</td> </tr> <tr> <td><u>2</u></td> <td>1 = Not Twisted</td> <td>2 = Twisted</td> </tr> <tr> <td><u>2</u></td> <td>1 = Wax Absent</td> <td>2 = Wax Present</td> </tr> </table>	<u>1</u>	1 = Erect	2 = Recurved	<u>2</u>	1 = Not Twisted	2 = Twisted	<u>2</u>	1 = Wax Absent	2 = Wax Present
<u>1</u>	1 = Erect	2 = Recurved								
<u>2</u>	1 = Not Twisted	2 = Twisted								
<u>2</u>	1 = Wax Absent	2 = Wax Present								

7. EAR EMERGENCE:

153 Number of Days (Average)

_____ Number of Days Earlier Than * _____

Same As * _____

1 Number of Days Later Than * WB-528

*Relative to a PVPO-Approved Commercial Variety Grown in the Same Trial

8. ANTHOR COLOR: 1 1 = Yellow 2 = Purple

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9. PLANT HEIGHT: (From Soil to Top of Head, Excluding Awns)

94 cm (Average)
2 cm Taller Than WB-528 *
 Same As _____ *
5 cm Shorter Than Tubbs *

10. STEM:

1 A. ANTHOCYANIN 1 = Absent 2 = Present
1 D. INTERNODE 1 = Hollow 2 = Semi-Solid 3 = Solid
4 Number of Nodes
2 B. WAXY BLOOM 1 = Absent 2 = Present
1 E. PEDUNCLE 1 = Erect 2 = Recurved 3 = Semi-Erect
36 cm Length
2 C. HAIRINESS (last internode of rachis) 1 = Absent 2 = Present
 F. AURICLE
1 Anthocyanin: 1 = Absent 2 = Present
2 Hair: 1 = Absent 2 = Present

11. HEAD: (At Maturity)

2 A. DENSITY
 1 = Lax
 2 = Middense (Laxidense)
 3 = Dense
2 B. SHAPE
 1 = Tapering
 2 = Strap
 3 = Clavate
 4 = Other (Specify) _____
2 C. CURVATURE
 1 = Erect
 2 = Inclined
 3 = Recurved
4 D. AWNEDNESS
 1 = Awnless
 2 = Apically Awnletted
 3 = Awnletted
 4 = Awned

12. GLUMES: (At Maturity)

1 A. COLOR
 1 = White
 2 = Tan
 3 = Other (Specify) _____
2 B. SHOULDER
 1 = Wanting 2 = Oblique
 3 = Rounded 4 = Square
 5 = Elevated 6 = Apiculate
 7 = Other (Specify) _____
2 C. SHOULDER WIDTH
 1 = Narrow
 2 = Medium
 3 = Wide
3 D. BEAK
 1 = Obtuse
 2 = Acute
 3 = Acuminate
2 E. BEAK WIDTH
 1 = Narrow
 2 = Medium
 3 = Wide
2 F. GLUME LENGTH
 1 = Short (ca. 7 mm)
 2 = Medium (ca. 8 mm)
 3 = Long (ca. 9 mm)
2 G. WIDTH
 1 = Narrow (ca. 3 mm)
 2 = Medium (ca. 3.5 mm)
 3 = Wide (ca. 4 mm)
1 H. PUBESCENCE
 1 = Not Present
 2 = Present

7

13. SEED:

3 A. SHAPE

- 1 = Ovate
- 2 = Oval
- 3 = Elliptical

2 B. CHEEK

- 1 = Rounded
- 2 = Angular

2 C. BRUSH

- 1 = Short
- 2 = Medium
- 3 = Long

- 1 1 = Not Collared
2 = Collared

D. CREASE

- 2 1 = Width 60% or less of Kernel
2 = Width 80% or less of Kernel
3 = Width Nearly as Wide as Kernel

- 2 1 = Depth 20% or less of Kernel
2 = Depth 35% or less of Kernel
3 = Depth 50% or less of Kernel

1 E. COLOR

- 1 = White
- 2 = Amber
- 3 = Red
- 4 = Other (Specify) _____

2 F. TEXTURE

- 1 = Hard
- 2 = Soft
- 3 = Other (Specify) _____

4 G. PHENOL REACTION

- 1 = Ivory
- 2 = Fawn
- 3 = Light Brown
- 4 = Dark Brown
- 5 = Black

43 H. SEED WEIGHT

g/1000 Seed (Whole Number Only)

2 I. GERM SIZE

- 1 = Small
- 2 = Midsize
- 3 = Large

14. DISEASE: PLEASE INDICATE THE SPECIFIC RACE OR STRAIN TESTED (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

0 Stem Rust (*Puccinia graminis* f. sp. *tritici*)

Race: _____

4 Leaf Rust (*Puccinia recondita* f. sp. *tritici*)

Race: Prevalent races in PNW

4 Stripe Rust (*Puccinia striiformis*)

Race: " " " "

0 Loose Smut (*Ustilago tritici*)

Race: _____

0 Tan Spot (*Pyrenophora tritici-repentis*)

Race: _____

0 Flag Smut (*Urocystis agropyri*)

Race: _____

0 Halo Spot (*Selenophoma donacis*)

Race: _____

0 Common Bunt (*Tilletia tritici* or *T. laevis*)

Race: _____

0 *Septoria nodorum* (Glume Blotch)

Race: _____

0 Dwarf Bunt (*Tilletia controversa*)

Race: _____

0 *Septoria avenae* (Speckled Leaf Disease)

Race: _____

0 Kamal Bunt (*Tilletia indica*)

Race: _____

0 *Septoria tritici* (Speckled Leaf Blotch)

Race: _____

0 Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*)

Race: _____

0 Scab (*Fusarium* spp.)

Race: _____

0 "Snow Molds"

Race: _____

0 "Black Point" (Kernel Smudge)

Race: _____

0 Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.)

Race: _____

0 Barley Yellow Dwarf Virus (BYDV)

Race: _____

0 Rhizoctonia Root Rot (*Rhizoctonia solani*)

Race: _____

0 Soilborne Mosaic Virus (SBMV)

Race: _____

0 Black Chaff (*Xanthomonas campestris* pv. *translucens*)

Race: _____

0 Wheat Yellow (Spindle Streak) Mosaic Virus

Race: _____

0 Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*)

Race: _____

0 Wheat Streak Mosaic Virus (WSMV)

Race: _____

0 Other (Specify) _____

Race: _____

0 Other (Specify) _____

Race: _____

0 Other (Specify) _____

Race: _____

0 Other (Specify) _____

Race: _____

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15. HOMOZYGOUS FOR SPECIFIC DISEASE RESISTANCE GENE

Stem rust _____
Leaf rust _____
Other _____

16. INSECT: PLEASE SPECIFY BIOTYPE (Where Needed) (0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Intermediate 4 = Tolerant)

- Hessian Fly (*Mayetiola destructor*) General _____
- Hessian Fly (*Mayetiola destructor*) Biotype A _____
- Hessian Fly (*Mayetiola destructor*) Biotype B _____
- Hessian Fly (*Mayetiola destructor*) Biotype C _____
- Hessian Fly (*Mayetiola destructor*) Biotype D _____
- Hessian Fly (*Mayetiola destructor*) Biotype E _____
- Hessian Fly (*Mayetiola destructor*) Biotype F _____
- Hessian Fly (*Mayetiola destructor*) Biotype G _____
- Hessian Fly (*Mayetiola destructor*) Biotype H _____
- Hessian Fly (*Mayetiola destructor*) Biotype I _____
- Hessian Fly (*Mayetiola destructor*) Biotype J _____
- Hessian Fly (*Mayetiola destructor*) Biotype L _____
- Hessian Fly (*Mayetiola destructor*) Biotype M _____
- Hessian Fly (*Mayetiola destructor*) Biotype N _____
- Hessian Fly (*Mayetiola destructor*) Biotype O _____
- Hessian Fly (*Mayetiola destructor*) (Specify) _____
- Stem Sawfly (*Cephus* spp.) (Specify) _____
- Cereal Leaf Beetle (*Oulema melanopa*) (Specify) _____
- Russian Aphid 1 (*Diuraphis noxia*) _____
- Russian Aphid 2 (*Diuraphis noxia*) _____
- Greenbug (*Schizaphis graminum*) (General) _____
- Greenbug (*Schizaphis graminum*) Biotype A _____
- Greenbug (*Schizaphis graminum*) Biotype B _____
- Greenbug (*Schizaphis graminum*) Biotype C _____
- Greenbug (*Schizaphis graminum*) Biotype E _____
- Greenbug (*Schizaphis graminum*) Other (Specify) _____
- Aphids (Specify) _____
- Other (Specify) _____

17. HIGH MOLECULAR WEIGHT GLUTENIN SUBUNIT PROFILE (Check those that apply):

<u>Glu-A1</u>	<u>Glu-B1</u>	<u>Glu-D1</u>
<input type="checkbox"/> 1	<input type="checkbox"/> 6+8	<input type="checkbox"/> 2+11
<input type="checkbox"/> 2*	<input type="checkbox"/> 7+8	<input type="checkbox"/> 2+12
<input type="checkbox"/> null	<input type="checkbox"/> 7+9	<input type="checkbox"/> 3+12
<input type="checkbox"/> 1*	<input type="checkbox"/> 13+16	<input type="checkbox"/> 5+10
	<input type="checkbox"/> 13+19	<input type="checkbox"/> null
	<input type="checkbox"/> 17+18	

18. TRANSLOCATIONS (1=Present 2=Absent 3=Heterogeneous 4= Not Tested):

- 1BL/1RS
- 1A/1R
- 2NS/2AS
- 4DL/4AgS
- OTHER (explain) _____
- OTHER (explain) _____

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19. IMIDAZOLINONE HERBICIDE TOLERANCE (1=Present 2=Absent 3=Not Tested):

2 Als-1

2 Als-2

2 Als-3

20. ADDITIONAL INFORMATION ON ANY ITEM ABOVE OR GENERAL COMMENTS:

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U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). The information is held confidential until the certificate is issued (7 U.S.C. 2426).

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

1. NAME OF APPLICANT(S) Monsanto Technology, LLC	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER BU 6W00-523	3. VARIETY NAME WB 523
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP, and Country) 800 North Lindbergh Blvd St. Louis, Missouri 63167	5. TELEPHONE (Include area code) 406-587-1218	6. FAX (Include area code) 406-586-8247
7. PVPO NUMBER 200900446 200900446		

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

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

10. Is the applicant the original owner? YES NO If no, please answer one of the following:

a. If the 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 the 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 (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

Monsanto Company purchased all the assets of WestBred, LLC on July 14, 2009. This includes all germplasm and all current and past varieties owned by WestBred, LLC or Western Plant Breeders, Inc.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet 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 the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.

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 0.1 hour per response, including the time for reviewing the 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, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (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 to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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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 5 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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program (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).

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**U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705**

**EXHIBIT F
DECLARATION REGARDING DEPOSIT**

NAME OF OWNER (S) Monsanto Technology, LLC	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) 800 North Lindbergh Blvd St. Louis, Missouri 63167	TEMPORARY OR EXPERIMENTAL DESIGNATION BU6000-523
		VARIETY NAME WB 523
NAME OF OWNER REPRESENTATIVE (S) Dr. Dale R. Clark	ADDRESS (Street and No. or RD No., City, State, and Zip Code and Country) WestBred 81 Timberline Drive Bozeman, MT 59718	FOR OFFICIAL USE ONLY
		PVPO NUMBER #200900446

I do hereby declare that during the life of the certificate a viable sample of propagating material of the subject variety will be deposited, and replenished as needed periodically, in a public repository in the United States in accordance with the regulations established by the Plant Variety Protection Office.

Dale R. Clark
Signature

Sept 1, 2009
Date

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