

No.



201600014

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

University of Idaho

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. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'UI Castle'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this sixth day of July, in the year two thousand and sixteen.*



Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

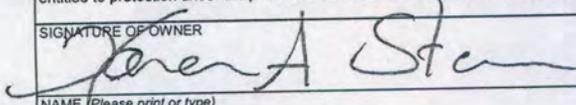
Secretary of Agriculture

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REPRODUCE LOCALLY. Include form number and date on all reproductions

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL MARKETING SERVICE SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE <i>(Instructions and information collection burden statement on reverse)</i>		<i>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.</i> <i>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).</i>	
1. NAME OF OWNER University of Idaho		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME	3. VARIETY NAME UI Castle
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country) University of Idaho 875 Perimeter Dr., MS3003 Moscow, ID 83844-3003		5. TELEPHONE (include area code) (208) 885 4550	FOR OFFICIAL USE ONLY PVPO NUMBER 201600014
		6. FAX (include area code) (208) 885 4551	FILING DATE 11/3/2015
7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) University of Idaho	8. IF INCORPORATED, GIVE STATE OF INCORPORATION Idaho	9. DATE OF INCORPORATION N/A	
10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. (First person listed will receive all papers) Karen A Stevenson Office of Technology Transfer University of Idaho 875 Perimeter Dr., MS3003 Moscow, ID 83844-3003		11. TELEPHONE (include area code) (208) 885 4550	F E E S R E C D FILING AND EXAMINATION FEES: \$ 4,382 DATE 11/3/2015 CERTIFICATION FEE: \$ DATE
		12. FAX (Include area code) (208) 885 4551	
13. E-MAIL karens@uidaho.edu		16. FAMILY NAME (Botanical) Gramineae	
14. CROP KIND (Common Name) common wheat	15. GENUS AND SPECIES NAME OF CROP Triticum aestivum L.		
17. IS THE VARIETY A FIRST GENERATION HYBRID? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	18. DOES THE VARIETY CONTAIN ANY TRANSGENES? (OPTIONAL) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO IF YES, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERCIALIZATION.		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) <input checked="" type="checkbox"/> YES (If "yes", answer items 21 and 22 below) <input type="checkbox"/> NO (If "no", go to item 23) <input type="checkbox"/> UNDECIDED
19. 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 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"/> Filing and Examination Fee (\$4,382), make checks payable to "Treasurer of the United States" (Mail to the Plant Variety Protection Office) other methods of payment explained in the instructions		21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, WHICH CLASSES? <input checked="" type="checkbox"/> FOUNDATION <input checked="" type="checkbox"/> REGISTERED <input checked="" type="checkbox"/> CERTIFIED	
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 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.)		22. 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 NUMBER 1,2,3, etc. FOR EACH CLASS. ___ FOUNDATION ___ REGISTERED ___ CERTIFIED (If additional explanation is necessary, please use the space indicated on the reverse.)	
25. The owners declare that a viable sample of basic seed will be furnished directly to an acceptable depository in support of the variety within three months of filing. Seed will be replenished upon request in accordance with such regulations as may be applicable. For a tuber propagated variety or vegetative propagated parent of the variety, a tissue culture or vegetative sample will be deposited in a public repository within three months of the date of the certificate fee request letter. These will be maintained for the duration of the certificate. The undersigned owner(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. Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.		24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT (PLANT BREEDER'S RIGHT OR PATENT)? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. (Please use space indicated on reverse.)	
SIGNATURE OF OWNER 		SIGNATURE OF OWNER	
NAME (Please print or type) Karen A Stevenson		NAME (Please print or type)	
CAPACITY OR TITLE Licensing Associate	DATE 2 Nov 2015	CAPACITY OR TITLE	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.)*

Seed of UI Castle was first sold in the U.S. on 2/9/15 for seed increase purposes.

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).)*

US utility application: 13/366,932

filed: 2012-02-06

priority date: 2001-08-09

title: Wheat Plants Having Increased Resistance to Imidazolinone Herbicides

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 AGRICULTURAL MARKETING SERVICE
 SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE
 APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

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EXHIBIT A – ORIGIN AND BREEDING HISTORY

** Use additional pages as needed.

1. Name of Owner University of Idaho	2. Temporary Designation or Experimental Name	3. Variety Name UI Castle MAH 4-05-2016
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4. Describe the genealogy (back to and including public and commercial varieties, lines, or clones used) and the breeding method(s). **
 UI Castle is derived from the cross 07-688-10/Bitterroot
 Bitterroot is a released line from the University of Idaho (PVP 200800411) its pedigree is DH-31/4/Lewjain/3/RDL/SU92//KAL/BB
 07-688-10 is an experimental line from University of Idaho used as a Donor of the 2 IMI resistance genes.
 UI Castle has been developed using a Di-Haploid method (Corn crossing Method).
 Also see Exhibit A attached.

5. Give the details of subsequent stages of selection and multiplication. **

Year	Detail of Stage	Selection Criteria
2008-2009	Cross	
2009-2010	DH Production	
2010-2011	Single row	Earliness, Height, Disease resistance, Vigor
2011-2012	Single plot	Earliness, Height, Disease resistance, Vigor
2012-2013	Multilocal (3), Multi treatment (3), replicated (3) trials	Yield, Agronomy, Quality Disease & Herbicide resistance
2013-2014	Multilocal (10), Multi treatment (3), replicated (3) trials	Yield, Agronomy, Quality Disease & Herbicide resistance
2014-2015	Multilocal (10), Multi treatment (3), replicated (3) trials	Yield, Agronomy, Quality Disease & Herbicide resistance
2014-2015	State Variety trials Idaho and Oregon	Yield, Agronomy, Disease Resistance & Regional Adaptation

6. Is the variety uniform? Yes No

How did you test for uniformity?

In 2013, selected plots were harvested and grain was grown in Washington in a single breeder block during the 2013-2014 season. Breeder block was evaluated for purity (Earliness, Height, Color, Head shape etc) and heavily rogued. The bulk was harvested to create breeder seeds.
 In 2014-2015 Breeder seeds were grown in Washington and purity was assessed.

7. Is the variety stable? Yes No

How did you test for stability? Over how many generations?

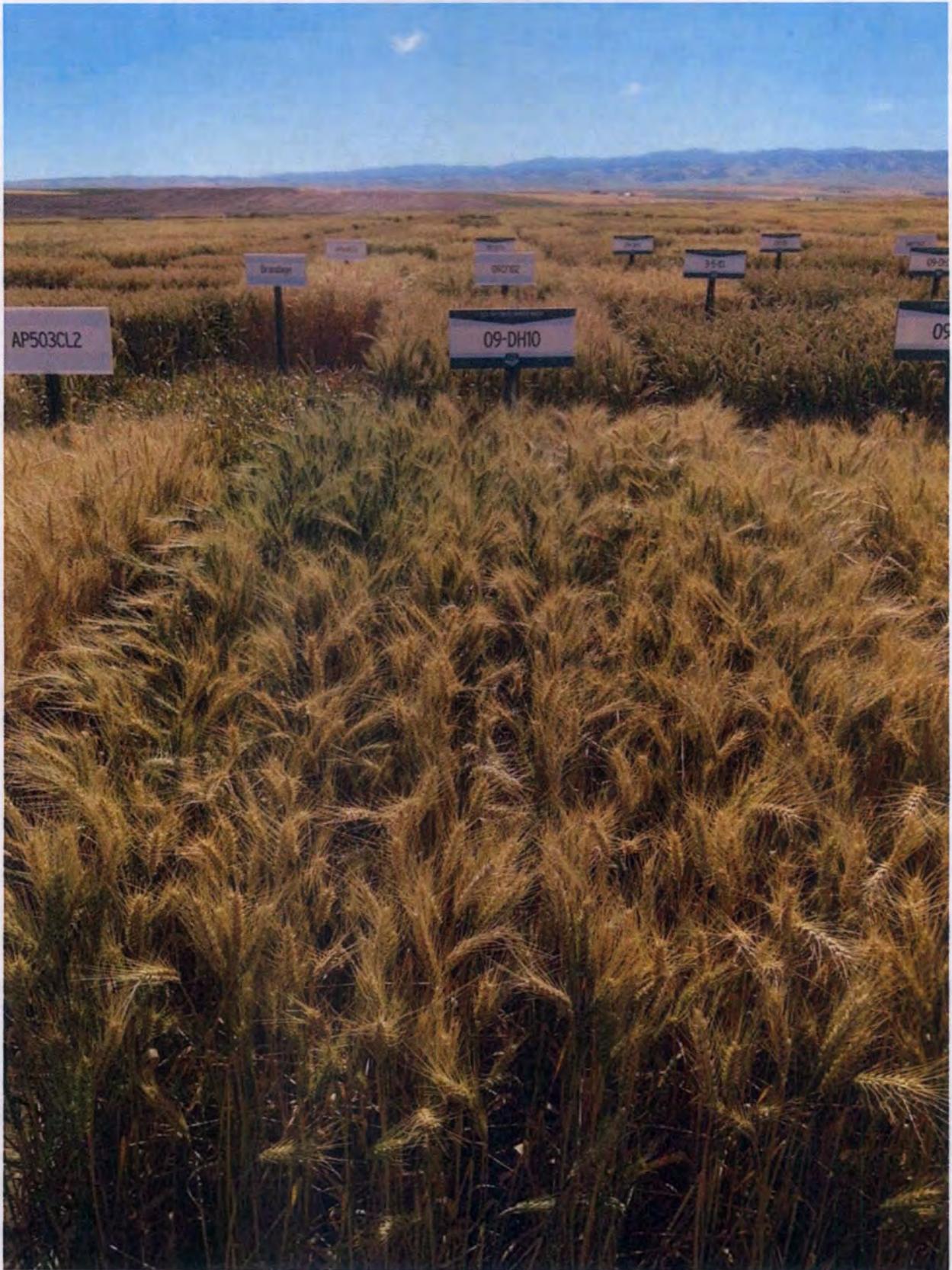
The stability of UI Castle was tested by comparing the variety within 3 successive generations, from the plots grown in 2012-2013 to the Seed increase and plots in 2013-2014 and finally the Breeder seeds and plots in 2014-2015.

8. Are genetic variants observed or expected during reproduction and multiplication? Yes No

If yes, state how these variants may be identified, their type and frequency.

UI Castle may contain up to 1 per 1000 of Blue Green color plants, up to 3 per 1000 awnless plants, and up to 2 per 1000 taller plants, up to 8" above the canopy height and up to 0.75% Red Seed.

Exhibit A: 09-DH10 is 'UI Castle'



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EXHIBIT B – STATEMENT OF DISTINCTNESS
**** Use additional tables to present clear differences for additional comparison varieties. Use additional pages to present supporting evidence.**

1. Name of Owner University of Idaho	2. Temporary Designation or Experimental Name	3. Variety Name UI Castle	MAH 4-05-2016
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Based on overall morphology, UI Castle is most similar to Bitterroot. UI Castle most clearly differs from Bitterroot in the following traits Name the specific trait. Then list the value of that trait for each variety in the comparison. Submit appropriate supporting evidence (see the Guidelines for Presenting Evidence in Support of Variety Distinctness in the instructions):

Applicant's new variety *Most similar comparison variety(ies)* *Applicant's new variety*

Most similar comparison variety(ies)

	<i>Eg. Leaf Pubescence</i> <i>Eg. Leaf Color</i> <i>Eg. Plant Height</i>	<i>heavy pubescence</i> <i>Dark Green (5GY 3/4)</i> <i>200 cm +/- 10 cm (N=25)</i>	<i>glabrous</i> <i>Light Green (2.5GY 8/10)</i> <i>250 cm +/- 15 cm (N=25)</i>	<i>photograph attached</i> <i>Munsell Color Chart</i> <i>statistics attached</i>
	1. Qualitative traits:	2. Color traits:	3. Quantitative traits:	4. Other traits:
Application Variety	Flag Leaf (boot Stage) : Recurved Flag Leaf (boot Stage) : Wax Absent			Imidazolinone Herbicide : Tolerant UI Castle differs from Bitterroot in that it has the 2 Clearfield genes Als-1 & Als-2
Comparison Variety 1	Bitterroot Flag Leaf (boot Stage) : Erect Flag Leaf (boot Stage) : Wax Present			Imidazolinone Herbicide : Susceptible
Comparison Variety 2				
Comparison Variety 3				

** Use additional tables to present clear differences for additional comparison varieties. Use additional pages to present supporting evidence.

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

88 cm (Average)

13 cm Taller Than

Artdeco *

Same As

3 cm Shorter Than

Bruneau *

0. 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

cm Length

1 C. HAIRINESS (last internode of rachis) 1 = Absent 2 = Present

1 F. AURICLE

1 Anthocyanin: 1 = Absent 2 = Present

2 Hair: 1 = Absent 2 = Present

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1. HEAD: (At Maturity)

1 A. DENSITY

- 1 = Lax
2 = Middense (Laxidense)
3 = Dense

2 C. CURVATURE

- 1 = Erect
2 = Inclined
3 = Recurved

1 B. SHAPE

- 1 = Tapering
2 = Strap
3 = Clavate
4 = Other (Specify)

4 D. AWNEDNESS

- 1 = Awnless
2 = Apically Awnletted
3 = Awnletted
4 = Awned

2. GLUMES: (At Maturity)

1 A. COLOR

- 1 = White
2 = Tan
3 = Other (Specify)

2 E. BEAK WIDTH

- 1 = Narrow
2 = Medium
3 = Wide

2 B. SHOULDER

- 1 = Wanting 2 = Oblique
3 = Rounded 4 = Square
5 = Elevated 6 = Apiculate
7 = Other (Specify)

2 F. GLUME LENGTH

- 1 = Short (ca. 7 mm)
2 = Medium (ca. 8 mm)
3 = Long (ca. 9 mm)

1 C. SHOULDER WIDTH

- 1 = Narrow
2 = Medium
3 = Wide

2 G. WIDTH

- 1 = Narrow (ca. 3 mm)
2 = Medium (ca. 3.5 mm)
3 = Wide (ca. 4 mm)

3 D. BEAK

- 1 = Obtuse
2 = Acute
3 = Acuminate

1 H. PUBESCENCE

- 1 = Not Present
2 = Present

SEED:

1 A. SHAPE

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

1 B. CHEEK

- 1 = Rounded
- 2 = Angular

1 C. BRUSH

- 1 = Short
- 2 = Medium
- 3 = Long
- 1 = Not Collared
- 2 = Collared

D. CREASE

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

- 1
- 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) _____

G. PHENOL REACTION

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

40 H. SEED WEIGHT

g/1000 Seed (Whole Number Only)

2 I. GERM SIZE

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

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

- Stem Rust (*Puccinia graminis* f. sp. *tritici*) Race: _____
- Leaf Rust (*Puccinia recondita* f. sp. *tritici*) Race: _____
- Stripe Rust (*Puccinia striiformis*) Race: _____
- Loose Smut (*Ustilago tritici*) Race: _____
- Tan Spot (*Pyrenophora tritici-repentis*) Race: _____
- Flag Smut (*Urocystis agropyri*) Race: _____
- Halo Spot (*Selenophoma donacis*) Race: _____
- Common Bunt (*Tilletia tritici* or *T. laevis*) Race: _____
- Septoria nodorum* (Glume Blotch) Race: _____
- Dwarf Bunt (*Tilletia controversa*) Race: _____
- Septoria avenae* (Speckled Leaf Disease) Race: _____
- Karnal Bunt (*Tilletia indica*) Race: _____
- Septoria tritici* (Speckled Leaf Blotch) Race: _____
- Powdery Mildew (*Erysiphe graminis* f. sp. *tritici*) Race: _____
- Scab (*Fusarium* spp.) Race: _____
- "Snow Molds" Race: _____
- "Black Point" (Kernel Smudge) Race: _____
- Common Root Rot (*Fusarium*, *Cochliobolus* and *Bipolaris* spp.) Race: _____
- Barley Yellow Dwarf Virus (BYDV) Race: _____
- Rhizoctonia Root Rot (*Rhizoctonia solani*) Race: _____
- Soilborne Mosaic Virus (SBMV) Race: _____
- Black Chaff (*Xanthomonas campestris* pv. *translucens*) Race: _____
- Wheat Yellow (Spindle Streak) Mosaic Virus Race: _____
- Bacterial Leaf Blight (*Pseudomonas syringae* pv. *syringae*) Race: _____
- Wheat Streak Mosaic Virus (WSMV) Race: _____
- Other (Specify) _____ Race: _____

listed as a 2 for resistance to strip rust, 4 for C-stripe, 6 for strawbreaker foot rot and 8 for soil-borne mosaic (1 being most resistant and 9 most susceptible). MAH 4-05-2016

HOMOZYGOUS FOR SPECIFIC DISEASE RESISTANCE GENE

Stem rust _____
 Leaf rust _____
 Other _____

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

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

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

<input type="checkbox"/>	<u>Glu-A1</u>	<input type="checkbox"/>	<u>Glu-B1</u>	<input type="checkbox"/>	<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		

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

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

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

1 A/s-1

1 A/s-2

2 A/s-3

. ADDITIONAL INFORMATION ON ANY ITEM ABOVE OR GENERAL COMMENTS:

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HEAT DESCRIPTOR ILLUSTRATIONS

ection Numbers Correspond to the Numbers of the Sections on the Form

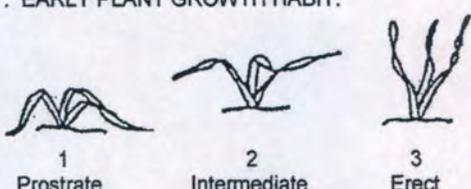
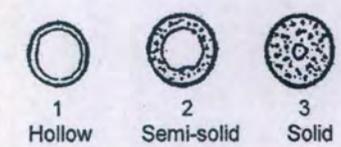
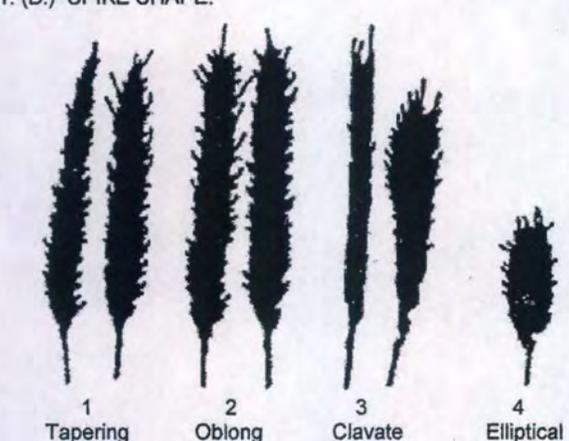
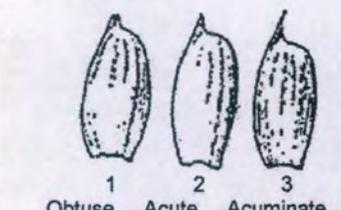
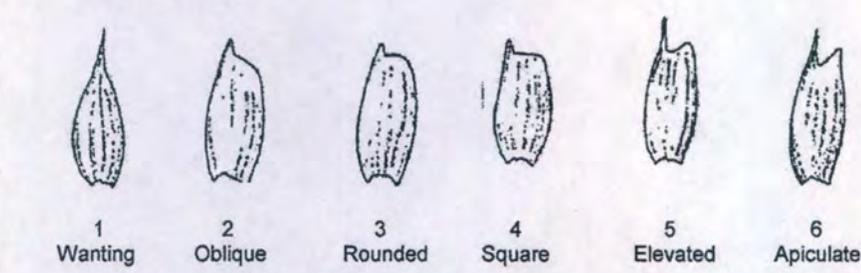
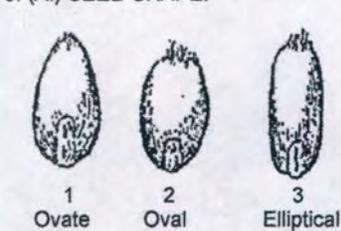
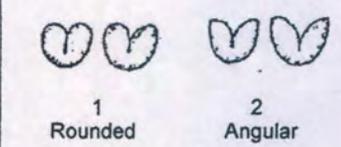
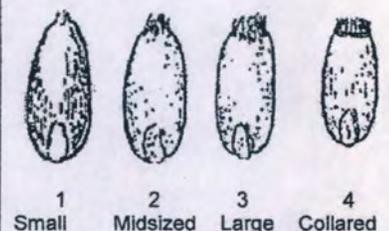
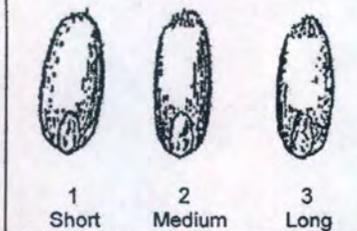
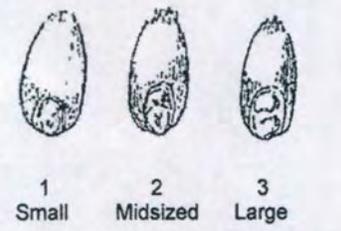
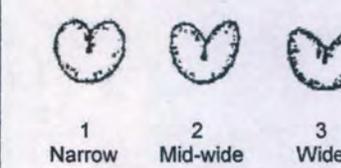
<p>1. EARLY PLANT GROWTH HABIT:</p>  <p>1 Prostrate 2 Intermediate 3 Erect</p>			<p>10. (D.) STEM INTERNODE X-SECTION:</p>  <p>1 Hollow 2 Semi-solid 3 Solid</p>			<p>11. (B.) SPIKE SHAPE:</p>  <p>1 Tapering 2 Oblong 3 Clavate 4 Elliptical</p>		
<p>1. (D.) AWNEDNESS:</p>  <p>1 Awnless 2 Apically Awnleted 3 Awnleted 4 Awned</p>			<p>12. (D.) BEAK SHAPE:</p>  <p>1 Obtuse 2 Acute 3 Acuminate</p>			<p>12. (C.) SHOULDER SHAPE:</p>  <p>1 Wanting 2 Oblique 3 Rounded 4 Square 5 Elevated 6 Apiculate</p>		
<p>3. (A.) SEED SHAPE:</p>  <p>1 Ovate 2 Oval 3 Elliptical</p>			<p>13. (B.) CHEEK SHAPE:</p>  <p>1 Rounded 2 Angular</p>		<p>13. (C.) BRUSH SIZE:</p>  <p>1 Small 2 Midsized 3 Large 4 Collared</p>		<p>13. (C.) BRUSH HAIR LENGTH:</p>  <p>1 Short 2 Medium 3 Long</p>	
<p>3. (I.) GERM (EMBRYO) SIZE:</p>  <p>1 Small 2 Midsized 3 Large</p>			<p>13. (D.) SEED CREASE WIDTH:</p>  <p>1 Narrow 2 Mid-wide 3 Wide</p>			<p>13. (D.) SEED CREASE DEPTH:</p>  <p>1 Shallow 2 Mid-Deep 3 Deep</p>		

EXHIBIT E - STATEMENT OF THE BASIS OF OWNERSHIP

1. Name of Owner University of Idaho	2. Temporary Designation or Experimental Name	3. Variety Name UI Castle
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MAH
4-05-2016

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

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

6. 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

7. Additional explanation on ownership (Trace ownership from original breeder to current owner. Use the reverse for extra space if needed):

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.