No. 8700201

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S), AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT ETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Mesa'

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* 30th *day of* December *in the year of our Lord one thousand nine hundred and* eighty-eight.

Attest:

Kenneth Kearn

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng

Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

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).

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

1. NAME OF APPLICANT(S) Nickerson American Plant Breeders Inc.	2. TEMPORARY DESIGNATION W81-171-14	3. VARIETY NAME MESA
4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)* 5201 Johnson Drive Mission, Kansas 66205	5. PHONE *(Include area code)* 913-384-4940 KS 303-532-3721 CO	FOR OFFICIAL USE ONLY PVPO NUMBER 8700201
6. GENUS AND SPECIES NAME Triticum aestivum	7. FAMILY NAME *(Botanical)* Gramineae	FILING DATE August 31, 1987 TIME 9:30 ☑ A.M. ☐ P.M.
8. KIND NAME Hard Red Winter Wheat	9. DATE OF DETERMINATION 1=1981 2=1985	FEES RECEIVED AMOUNT FOR FILING $ 1800.00 DATE August 31, 1987
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)* Corporation		AMOUNT FOR CERTIFICATE $ 200.00 DATE Nov. 1, 1988
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		12. DATE OF INCORPORATION January 19, 1983

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

R.E. Heiner
5201 Johnson Drive
Mission, KS 66205 (913)384-4940

OR

R.F. Bruns or C. Bruns
806 N. Second St.
Berthoud, CO 80513 (303)532-3721

PHONE *(Include area code)*:

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership. f. Exhibit F. Quality & Agronomic Data

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

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

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? ☒ Foundation ☒ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? ☐ Yes *(If "Yes," give date)* ☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES? ☐ Yes *(If "Yes," give names of countries and dates)* ☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

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

SIGNATURE OF APPLICANT [signature]	DATE 7-20-87
SIGNATURE OF APPLICANT RE Heiner	DATE 8-18-87

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

1

EXHIBIT A.

ORIGIN AND BREEDING HISTORY OF MESA

Mesa was derived in 1983 as a single F7 head-row reselection from the segregating motherline W81-171. W81-171 was an F3 derived line from the cross OK11252/W76-1226, which had superior performance in yield trials but was recycled in head-rows due to excessive levels of segregation.

Mesa was tested under the experimental line number W81-171-14 in preliminary and replicated yield trials at numerous locations in the Hard Red Winter Wheat Region of the Great Plains from 1984-1986. It was entered in the 1986 Southern Regional Performance Nursery (SRPN) and was the eighth highest yielding line over locations. It is entered in the 1987 SRPN, and official state and private trials in Texas, Oklahoma, Kansas, Colorado, Nebraska, Missouri, New Mexico and South Dakota for further testing.

In 1984 .005 of an acre derived from a single F7 head was grown as a preliminary Breeder Seed Increase. In 1985 480 pounds of Breeder Seed was produced in Berthoud, Colorado.

Mesa is uniform and stable. Less than .5% of the plants were rogued from the Foundation fields in 1986. Approximately 95% of the rogued variant plants were 3 to 12 centimeters taller than Mesa. Less than .75% total variant plants may be encountered in subsequent generations.

EXHIBIT B

NOVELTY STATEMENT

Mesa is most similar to the hard red winter wheat Trailblazer. However, it can easily be distinguished by the following morphological charateristics:

- Mesa has a glume length that is classified as midlong to long. Trailblazer has a glume length that is classifed as long, (see statistical data following page).
- Both Mesa and Trailblazer have glume widths the are classifed as narrow, however, they vary significantly (see statistical data following page).
- Both Mesa and Trailblazer differ significantly in height (see satistical data following page).

ANOVA TABLE FOR PLANT HEIGHT

MESA-ABILENE-TRAILBLAZER

SOURCE	DF	SS	MS
TOTAL	98	10931.344	
VAR	2	671.889	335.94460
ERROR	96	10259.455	106.86932

F-TEST = 6.287**
CV = .207
LSD(5%) = .886

MEANS FOR EACH VARIETY

ABILENE = 69.24 cm
MESA = 67.12 cm
TRAILBLAZER = 73.394 cm

**The difference in means of plant height are significantly different at the 1% probability level.

ANOVA TABLE FOR GLUME LENGTH

MESA VERSUS TRAILBLAZER

SOURCE	DF	SS	MS
TOTAL	49	9.244	
VAR	1	4.498	4.49765
ERROR	48	4.747	0.09889

F-TEST = 45.481**
CV = 0.398
LSD(5%) = 0.036

MEANS FOR EACH VARIETY

MESA = 8.58 mm
TRAILBLAZER = 9.18 mm

** The difference in means of glume length are significantly different at the 1% probability level.

ANOVA TABLE FOR GLUME WIDTH

MESA VERSUS TRAILBLAZER

SOURCE	DF	SS	MS
TOTAL	49	2.667	
VAR	1	0.980	0.98003
ERROR	48	1.687	0.03515

F-TEST = 27.881**
CV = 2.049
LSD(5%) = 0.021

MEANS FOR EACH VARIETY

MESA = 3.15 mm
TRAILBLAZER = 2.88 mm

**The difference in means of glume width are significantly different at the 1% probability level.

'MESA'

FORM APPROVED: OMB NO. 0581-0055

EXHIBIT C
(Wheat)

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Nickerson American Plant Breeders Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
5201 Johnson Drive
Mission, KS 66205

FOR OFFICIAL USE ONLY
PVPO NUMBER 8700201
VARIETY NAME OR TEMPORARY DESIGNATION
MESA

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0|8|9] or [0|9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____
[2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____
[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM planting **TO:**
[2|3|0] FIRST FLOWERING
[2|3|5] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[0|5] NO. OF DAYS *EARLIER* THAN .....
[ ] NO. OF DAYS *LATER* THAN .....
[7.] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Trailblazer

5. PLANT HEIGHT (*From soil level to top of head*):
[0|6|7] CM. HIGH
[ ] CM. TALLER THAN .....
[0|6] CM. SHORTER THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Trailblazer

6. PLANT COLOR AT BOOTING (*See reverse*):
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode or rachis: 1 = ABSENT 2 = PRESENT
[0|4] NO. OF NODES (*Originating from node above ground*)
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[1|7] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[1|2] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[2|1] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LPGS-470.6 (7-81) (Edition of 3-79 may be used)

7

FORM GR-470-5 (REVERSE) 'MESA' 8700201

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3=Middense

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[8.7] CM. LENGTH

[11] MM. WIDTH

12. GLUMES AT MATURITY:

[2-3] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) average 8.6mm's

[1] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[2] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1-3] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL ovate to elliptical

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1-2] Brush: 1 = SHORT 2 = 3 = LONG short to midlong

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[---] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[6.3] MM. LENGTH

[3.3] MM. WIDTH

[35] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[4] STEM RUST (Races) _____

[2/4] LEAF RUST (Races) field races

[0] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[1] POWDERY MILDEW

[0] BUNT

[2] OTHER (Specify) Soil Borne Mosaic Virus

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

HESSIAN FLY RACES:

GP	A	B	C
3/4	0	0	0
D	E	F	G
0	0	0	0

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Trailblazer	Seed size	Trailblazer
Leaf size	Trailblazer	Seed shape	Trailblazer
Leaf color	Trailblazer	Coleoptile elongation	Trailblazer
Leaf carriage	Trailblazer	Seedling pigmentation	Trailblazer

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States. Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

8

EXHIBIT D

ADDITIONAL BOTANICAL DESCRIPTION OF MESA

Mesa is a hard red winter wheat bred and developed by Nickerson American Plant Breeders Inc. It was tested as experimental number W81-171-14.

Mesa is a very high yielding, early maturity, winterhardy, short semidwarf hard red winter wheat with good milling and baking properities. Mesa has consistently been in the top yield group throughout much of the HRWW region.

In additon to its high yield potential Mesa has been identified as having excellent test weight patterns, very good drought response, excellent straw strength, excellent protection against soil borne mosaic virus and very good protection against the current races of leaf rust. Mesa has good protection levels against current races of stem rust, wheat spindle streak mosaic virus, and speckled leaf blotch. Resistance to tan spot is fair. Mesa has Marquillo resistance to Hessian fly, but is susceptible to powdery mildew.

Juvenile growth habit is semi-erect. Plant color is dark green with an erect, twisted flag leaf. Auricle hairs and auricle anthocyanin are present. Head shape is middense, tapering, awned and head color is white at maturity. Glumes are midlong to long, and narrow with oblique to round shoulders and acuminate beaks. Seed shape is ovate to elliptical with rounded cheeks. Seed crease is narrow and shallow.

Data to date indicate that Mesa is broadly adapted to the HRWW region. It appears exceptionally well adapted to the southern two-thirds of the HRWW region (Interstate 70 and south). Additional testing will more clearly define where Mesa is well adapted.

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.

b) The proprietory owner and intending commercial user of the variety.

EXHIBIT F.

QUALITY AND AGRONOMIC DATA

Quality Data . . . . . .page 1.

Agronomic Data and Pathological Traits. . . . . page 2.

AGRIPRO SEEDS

YEAR: 1986

HARD RED WINTER WHEAT QUALITY

YEAR	SAMPLE NAME	LOC	WHEAT--FLOUR QUALITY: TEST WT.	WHT PROT	FLR YLD	FLR PROT	FLR ASH	MIX CURVE	BAKING QUALITY: ABS.	MIX TIME	DOUGH CHAR	LOAF VOL	CRUMB: GRN	TEX	COL	MILL SCORE	BAKE SCORE	TOTAL SCORE
MESA			lb/Bu	14%mb	%	14%mb	14%mb	R	%	min	R	cc	R	R	R			
84	HW81-171-14	SO	60.1	12.5	72.4	11.2	0.000	6	63.0	3.5	8	950	8	8	8	82-B	88-B	170-B
85	HW81-171-14	TI	62.8	11.2	67.7	10.1	0.476	4	61.0	1.8	6	780	7	6	7	60-D	61-D	121-D
85	HW81-171-14	SK	56.6	11.8	70.4	10.8	0.424	6	63.0	3.3	6	880	7	8	8	67-D	79-C	146-C
85	HW81-171-14	BB	61.6	12.6	69.1	11.3	0.401	5	62.0	2.5	7	900	8	8	8	75-C	80-B	155-C
85	HW81-171-14	GK	60.3	13.3	68.9	11.7	0.443	7	65.0	2.3	7	930	7	8	8	82-B	80-B	162-B
86	W81-171-14	WK	60.6	11.5	64.0	10.4	0.444	4	61.0	3.8	8	850	7	7	7	58-F	77-C	135-D
86	W81-171-14	NO	60.4	12.5	63.9	11.2	0.371	6	62.0	4.3	8	970	8	8	8	71-C	86-B	157-C
86	W81-171-14	GI	63.2	12.0	66.6	10.6	0.388	7	65.0	2.5	8	860	7	7	8	72-C	80-B	152-C
	AVERAGE		60.7	12.2	67.9	10.9	0.421	6	62.8	3.0	7	890	7	8	8	71-C	79-C	150-C
84	NEWTON	SO	57.5	11.6	69.3	10.5	0.000	4	60.0	3.8	8	860	8	7	8	62-D	78-C	140-C
85	NEWTON	TI	59.7	12.5	67.9	11.5	0.509	7	65.0	2.5	8	810	7	8	7	76-C	78-C	154-C
85	NEWTON	SK	52.1	12.6	66.8	11.6	0.431	5	60.0	3.0	7	840	5	6	7	59-F	67-D	126-D
85	NEWTON	BB	56.7	13.2	66.8	12.2	0.378	7	64.0	3.3	8	1000	8	9	8	73-C	91-A	164-B
85	NEWTON	GK	54.8	13.6	66.7	12.2	0.406	6	62.0	3.8	7	930	8	9	9	67-D	86-B	153-C
86	NEWTON	WK	55.7	10.8	60.6	9.7	0.420	5	63.0	3.3	7	780	8	8	8	47-F	78-C	125-D
86	NEWTON	NO	54.5	12.0	63.7	10.9	0.000	7	63.0	4.0	8	980	7	7	8	60-D	86-B	146-C
86	NEWTON	GI	60.3	11.4	66.5	9.8	0.407	6	64.0	2.8	8	830	8	8	8	62-D	81-B	143-C
	AVERAGE		56.4	12.2	66.0	11.1	0.425	6	62.6	3.3	8	879	7	8	8	64-D	80-B	144-C

GRADES: A-EXCELLENT B-GOOD C-ACCEPTABLE D-QUESTIONABLE F-UNACCEPTABLE
R=RATINGS: 9-10=EXCELLENT 8=GOOD 7=ACCEPTABLE 5-6=QUESTIONABLE 1-4=UNACCEPTABLE

8700201

12

RELATIVE RANKINGS OF MESA AND 17 OTHER HRWW VARIETIES FOR VARIOUS AGRONOMIC AND PATHOLOGICAL TRAITS

VARIETY	TEST WT.	SHATTERING POTENTIAL	ANTHESIS	PHYSIOLOGICAL MATURITY	COLEOPTILE EXPRESSION	HEIGHT	STRAW STRENGTH	WINTERHARDINESS	LEAF RUST	STEM RUST	SOIL BORNE MOSAIC VIRUS	SPINDLE STREAK MOSAIC VIRUS	SEPTORIA TRITICI	TAN SPOT	POWDERY MILDEW	HESSIAN FLY
Mesa	3	6	3	4	4	3	2	5	3	4	3	3	5	7	6	4
Abilene	3	6	5	6	5	4	2	3	3	6	2	4	2	5	7	8
Trailblazer	4	5	5	5	4	4	5	5	4	4	3	4	3	2	8	8
Siouxland	4	6	5	5	5	6	5	3	3	2	8	7	3	4	2	7
Brule	6	8	6	5	6	5	6	2	7	5	6	5	5	7	8	2
Rocky	4	6	7	6	3	7	7	4	7	4	2	2	5	5	4	8
Tam 107	6	4	2	2	4	3	3	3	8	5	6	5	5	6	1	8
Arkan	5	7	4	3	2	4	4	4	4	1	2	4	3	5	2	2
Vona	6	4	5	4	8	3	3	7	7	6	8	9	5	5	4	4
Tam 105	6	3	3	4	5	4	3	3	8	8	6	9	4	5	5	8
Newton	5	4	4	4	6	4	5	7	8	5	2	4	6	7	5	8
Wings	2	5	5	4	7	4	6	5	7	5	8	5	4	5	4	4
Hawk	6	3	5	6	5	4	5	5	8	4	3	2	6	4	4	8
Wrangler	3	3	5	3	6	3	3	5	7	4	3	7	7	7	7	6
Mustang	4	3	5	3	6	3	4	6	8	5	3	6	7	4	7	6
Thunderbird	4	6	5	5	1	5	3	3	2	2	1	6	3	7	6	4
Victory	6	6	5	3	3	4	4	4	3	5	2	1	4	4	5	8
Stallion	4	6	5	4	5	3	1	6	6	7	3	6	3	6	6	4
Mean Score	4.5	5.1	6.7	4.9	6.2	5.3	5.1	6.4	6.7	4.3	4.9	5.7	4.4	5.3	5.5	5.8
Std. Dev.	1.3	1.5	3.9	1.9	4.1	3.9	3.2	3.8	3.3	1.9	3.9	3.6	1.5	1.4	2.2	2.4

The rankings in the table above are based on a scale of 1-9, where 1 and 9 represent the following extremes for the respective traits.

	1	9
Test Weight	high	low
Shattering Potential	low	high
Maturity	early	late
Coleoptile Expression	short	long
Straw Strength	strong	weak
Winterkill	hardy	tender
All disease & insect ratings	resistant	susceptible