

7972004 Hard Red Spring Wheat
Tested as XA9760

1. Breeding History

XA9760 was selected from the cross 'CABERNET/EXPRESSO'.

*Generation	*Year	*Description
Cross	2008	The cross was made near Bozeman, MT .
F ₁	2008	Plants were grown near Yuma, AZ and advanced using bulk .
F ₂	2009	Plants were grown near Bozeman, MT and advanced using bulk .
F ₃	2009	Plants were grown near Yuma, AZ and advanced using bulk .
F ₄	2010	Plants were grown near Bozeman, MT and advanced using bulk .
F ₅	2011	Plants were grown near Bozeman, MT and advanced using bulk .
F ₆	2012	Plants were grown near Bozeman, MT and the variety 01071782 was identified and selected based on Yield, Agronomics, and Disease Resistance .

Yield Testing

Generation	Year	Advancement/Selection Criteria
F ₇	2013	Yield, Agronomics, Test Weight, Protein, Disease, Quality
F ₈	2014	Yield, Agronomics, Test Weight, Protein, Disease, Quality
F ₉	2015	Yield, Agronomics, Test Weight, Protein, Disease, Quality
F ₁₀	2016	Yield, Agronomics, Test Weight, Protein, Disease, Quality

2. Phenotypic description

1. Kind:	Hard Red		
	If common, provide appropriate kernel characteristic: (Hard Red, Soft Red, Hard White, Soft White)		
2. Seasonal Growth Habit:	Spring	16. Awn Type:	Awned
3. Coleoptile Color:	White	17. Awn Color:	White
4. Juvenile Growth Habit:	Semi-erect	18. Glume Color:	White
5. Leaf Color at Boot:	Green	19. Glume Length:	Long
6. Flag Leaf at Boot:	Erect, Twisted, Wax Present	20. Shoulder Shape:	Elevated
7. Auricle Color:	Purple	21. Shoulder Width:	Narrow
8. Days to 50% Heading:	128	22. Beak Shape:	Acuminate
9. Anther Color:	Yellow	23. Beak Length (S.M.L.VL):	No Data
10. Anthoncyanin:	Absent	24. Glume Pubescence:	Not Present
11. Plant Height (cm):	86	25. Seed Color	Red
12. Internodes:	Hollow	26. Seed Shape:	Oval
13. Spike Shape:	Tapering	27. Cheeks:	Angular
14. Spike Density:	Lax	28. Brush Size (S,M,L.):	Medium
15. Spike Curvature:	Recurved	29. Avg 1,000 Kernel Wt (g):	48.5

30. Physiological/biochemical Traits:

Variants and frequency:

A variant that is similar to XA9760 but has white seed occurs at a frequency of up to .50% (50 out 10,000 seeds). A variant that is similar to XA9760 but is 10cm to 15cm taller occurs at a frequency of up to .2% (20/10,000). A bronze head variant may occur at a frequency of .1% (10/10,000). An awnless variant may occur at a frequency of .1% (10/10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations and environments.

3. TABLE 2 DESCRIPTION PARAGRAPH

In Table 2, yield, quality, and agronomic characteristics collected in 2014-2016 in the Northwest region of the United States, including Washington, Idaho, and Montana, or wheat cultivar XA9760 are compared to check cultivars. Table 2 shows protein and SDS on a 12% moisture basis. Plant height is measured in inches. Lodging and disease ratings were measured on a 1-9 scale with 1 being the most resistant and 9 being the most susceptible.

TABLE 2: COMPARATIVE DATA FOR CULTIVAR XA9760 and SELECTED CULTIVARS

Head	XA9760	XA9760	XA9760	XA9760	XA9760
Other	WB9668	WB9411	WB9200	BULLSEYE	DAYN
NA Standardized Regions	Wheat_NA:GREATER NORTHWEST	Wheat_NA:GREATER NORTHWEST	Wheat_NA:GREATER NORTHWEST	Wheat_NA:GREATER NORTHWEST	Wheat_NA:GREATER NORTHWEST
YLD_BE Years	3	3	3	3	2
YLD_BE # Obs	27	27	27	22	17
YLD_BE Wins Total	16	11	16	11	7
YLD_BE Wins %	59	41	59	50	41
H YLD_BE	83	83	83	92.6	92.2
O YLD_BE	80	83.4	78.8	88.3	95
YLD_BE Dev	2.9970646	-0.4509993	4.1453836	4.3291838	-2.8719421
YLD_BE p-Val	0.02873	0.7853368	0.0845937	0.09613	0.1895486
YLD_BE Signif	*		+	+	
TWT_BE Years	3	3	3	3	2
TWT_BE # Obs	22	22	22	19	15
TWT_BE Wins Total	11	9	4	8	8
TWT_BE Wins %	50	41	18	42	53
H TWT_BE	60.3	60.3	60.3	60.9	60.9
O TWT_BE	60.8	60.7	61.1	60.5	61.1
TWT_BE Dev	-0.4307466	-0.3569357	-0.8184847	0.3650853	-0.2136754
TWT_BE p-Val	0.1749705	0.2163992	0.0228678	0.4281257	0.6061265
TWT_BE Signif			*		
PRO_BE Years	3	3	3	3	2
PRO_BE # Obs	6	5	5	5	3
PRO_BE Wins Total	1	2	5	5	3
PRO_BE Wins %	17	40	100	100	100
H PRO_BE	15.7	15.6	15.6	15.6	15.4
O PRO_BE	16	15.6	15	14.9	14.7
PRO_BE Dev	-0.3020931	0.00184	0.55668	0.6859938	0.6542333
PRO_BE p-Val	0.2169081	0.9950486	0.0324285	0.0057601	0.0289379
PRO_BE Signif			*	**	*
LG3 Years	2	1	1	2	1
LG3 # Obs	3	1	1	3	1
LG3 Wins Total	1	0	0	3	0
LG3 Wins %	50	0	0	100	0
H LG3	1.3	2	2	1.3	2
O LG3	1.3	1.3	1	4.2	1
LG3 Dev	0.0753795	0.6667	1	-2.8179917	1
LG3 p-Val	0.8780409			0.2220076	
LG3 Signif					
PHT Years	2	2	2	2	1
PHT # Obs	4	3	3	4	1
PHT Wins Total	0	1	0	1	1
PHT Wins %	0	33	0	25	100
H PHT	34	33	33	34	35
O PHT	31	32	31	33	37
PHT Dev	2.8257922	1.4888898	1.9444488	0.7635883	-2.3333465
PHT p-Val	0.0617763	0.4934468	0.2574163	0.0785544	
PHT Signif	+			+	
HED Years	3	2	2	3	1
HED # Obs	7	4	4	6	1
HED Wins Total	0	1	0	1	0
HED Wins %	0	25	0	17	0
H HED	128	168	168	122	163
O HED	125	166	164	121	161
HED Dev	2.6036626	1.9319675	4.312525	1.3818902	1.1667
HED p-Val	0.0031321	0.0858611	0.0031543	0.0283383	
HED Signif	**	+	**	*	

** , * , + Significant at P<0.01, 0.05, or 0.10, respectively

4.

XA9760 HARD RED SPRING

XA9760 is a common Hard Red Spring wheat adapted to the Pacific Northwest region of the United States. XA9760 was developed by WestBred, from the cross 'CABERNET/EXPRESSO'.

XA9760 is a semi-tall hard red spring wheat. The head is tapering, lax, and recurved at maturity. The glume shoulders are elevated with an acuminate beak. The seed is hard, red, and oval with angular cheeks. The brush is medium with no collar.

A variant similar to XA9760 but is 10-15 cm taller occurs at a frequency of .2% (20 plants per 10,000). A white seed variant may occur at a frequency of up to .50% (50 seeds per 10,000). An awnless variant may occur at a frequency of .1% (10 plants per 10,000). A bronze chaff variant may occur at a frequency of .1% (10/10,000). Otherwise, this variety has been uniform and stable in appearance and performance across several generations and environments.

5. Recognized classes of this variety will be breeder, foundation, registered, and certified. Monsanto will maintain the variety by the head-row purification and bulk seed methods to produce breeder seed as needed and foundation seed will be produced from breeder or foundation class of seed.