

'FourOsix' Winter Wheat

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FourOsix - hard red winter wheat developed by the Montana Agricultural Experiment Station and available to certified seed growers in fall 2018. FourOsix is a medium maturing, short to medium statured wheat, with average winter-hardiness. FourOsix is a high yielding variety with above average test weight and average protein. FourOsix (50% Yellowstone, in pedigree) is similar in grain yield of Yellowstone (Table 1), but with significantly earlier heading, shorter plant height, and significantly higher test weight and protein (Table 2). FourOsix is resistant to stripe rust and this resistance is either similar or significantly higher than that of Yellowstone. FourOsix is moderately susceptible to stem rust. FourOsix has excellent milling and baking qualities, comparable to Decade and parental cultivar, Yellowstone (Table 3). PVP, Title V will be applied for.

Table 1. Yield of FourOsix vs. a set of varieties, 2016-2018^{1/}

Variety	Districts							All Locations
	1 Kalispell	2 Bozeman	3 Huntley ^{2/}	4 Moccasin ^{3/}	5 Conrad ^{4/}	5 Havre ^{5/}	6- Sidney & Williston	
location-years	2	2	12	10	10	8	4	48
Keldin	101.2	115.1	92.2	64.0	73.8	58.1	67.8	76.1
SY Monument	105.6	114.8	87.3	64.2	71.2	58.4	62.1	74.1
Northern	106.0	116.0	86.4	59.4	69.6	58.4	59.5	72.4
Yellowstone	89.3	116.2	84.2	60.3	70.4	58.2	60.5	71.6
FourOsix	113.7	111.4	84.5	61.9	68.7	54.8	56.0	71.5
SY Wolf	85.1	99.0	86.7	62.2	68.7	54.5	62.4	70.9
Decade	33.5	90.2	81.5	60.7	64.2	54.1	56.2	65.2
LSD (0.05)	ns	ns	ns	ns	4.2	ns	ns	3.5

bold = indicates highest value w ithin a column

bold = indicates varieties w ith values equal to highest variety w ithin a column based on Fisher's Protected LSD (p =0.05)

1/ = 2016, 2018 Intrastate and 2017-2018 Off Station tests

2/ includes data from Billings, Fort Smith, Hardin area, Hysham, Molt, Rapelje

3/ includes data from Belt, Denton, Geraldine, Highwood, Winifred

5/ includes data from Choteau, Cut Bank, The Knees, Shelby

6/ includes data from Carter, Loma, Turner

Table 2. Agronomic characteristics of FourOsix vs. a set of varieties, 2016-2018^{1/}

Variety	Test weight	Winter survival	Heading date		Plant height	Lodging	Protein	Saw fly cutting	Stripe rust	Coleoptile length
	lb/bu	%	Julian	Calendar	in	%	%	%	%	in
location-years	48	1	18		47	7	47	10	2	1
Decade	60.4	69	157.5	7-Jun	30.4	26	12.7	38	75	2.9
FourOsix	60.9	48	158.1	7-Jun	29.5	27	12.3	48	22	2.8
Keldin	61.4	57	158.3	7-Jun	30.2	32	12.1	45	50	2.8
Northern	60.6	49	160.6	10-Jun	30.3	31	12.6	42	33	2.6
SY Monument	60.2	60	156.5	6-Jun	29.3	26	11.7	45	18	3.1
SY Wolf	61.9	51	155.6	5-Jun	29.1	30	12.4	33	33	3.1
Yellowstone	60.1	62	159.7	9-Jun	31.8	29	12.2	48	51	2.7
LSD (0.05)	0.5	12	0.7		0.6	ns	0.2	ns	29	0.2

1/ = 2016, 2018 Intrastate and 2017-2018 Off Station tests

bold = indicates highest value w ithin a column

bold = indicates varieties w ith values equal to highest variety w ithin a column based on Fisher's Protected LSD (p =0.05)

Table 3. Mill and bake characteristics of FourOsix vs. a set of varieties, 2016-2017:

Variety	PPO ^{1/}	Kernel hardness	Flour			Mixograph			Baking		
			yield %	protein %	Ash %	tolerance (1-6)	mix time min	absorption %	mix time min	absorption %	volume cc
location-years	8	8	8	8	8	8	8	8	8	8	8
Decade	0.249	74.1	70.2	10.9	0.41	3.5	7.2	66.4	19.2	76.6	988
FourOsix	0.256	71.1	71.6	11.7	0.43	2.6	5.7	67.2	12.5	77.1	1074
Keldin	0.328	64.6	70.0	10.7	0.44	3.0	5.0	63.6	9.0	73.9	956
Northern	0.104	81.6	70.7	11.5	0.45	2.6	3.9	64.3	5.6	74.0	1033
SY Monument	0.187	74.2	71.6	10.6	0.41	3.5	8.4	64.9	15.9	75.7	961
SY Wolf	0.250	73.1	70.1	10.7	0.40	1.9	4.2	60.9	6.8	70.9	956
LSD (0.05)	0.042	3.7	0.7	0.5	0.02	0.6	1.3	2.4	3.3	2.4	40

bold = indicates highest value w ithin a column

bold = indicates varieties w ith values equal to highest variety w ithin a column based on Fisher's Protected LSD (p =0.05)

^{1/} low is best for noodles