

PROJECT TITLE: Dryland Statewide Winter Triticale Performance Trial near Huntley, Montana.
(Exp. 01T408).

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OBJECTIVES: To provide cereal growers in south central Montana with a reliable, unbiased, up-to-date source of information that will permit valid comparisons among winter triticale varieties. This information should help cereal growers in south central Montana select winter triticale varieties best suited to their particular area and growing conditions.

METHODS: The 2001 dryland statewide triticale trial contained 16 entries including 'Tiber' hard red winter wheat as a winter wheat check. The trial was planted using a randomized complete block design with three replications. Test plots consisted of a 15-foot, 4-row plot with 12-inch row spacing. All rows of each test plot were trimmed 36 inches and harvested using an experimental-plot combine. Recorded grain yields were adjusted to 13% grain moisture content, and are reported in pounds per acre because of differences in crop bushel weights. Test weight (pounds per bushel) and percent grain moisture content were obtained for all replications using a Dickey-john GAC 2100 grain analyzer. Plant height was measured in inches from the soil surface to the top of the head, excluding the awns if present. Heading date was noted when 50% of the heads in a plot had extended above the flag leaf collar. Heading dates were recorded in Julian days (number of days from January 1) for statistical purposes. Corresponding calendar dates also are presented.

RESULTS and SUMMARY: Only 5.3 inches of precipitation between planting and the end of May resulted in shorter plant heights, fewer tillers, and a generally poor crop. Weather events in the month of June resulted in an additional 5.06 inches of precipitation. The additional rainfall resulted in secondary tiller growth, delaying harvest of the triticale study by nearly three weeks.

Agronomic performance of the triticale cultivars and lines tested during 2001 under dryland conditions near Huntley is presented in Table 1. Dryland triticale yields averaged 2,053 lb/ac, which was nearly 1,700 lb/ac less than the 2000 grain production. Seed yields ranged from 2,671 to 1,401 lb/ac in 2001. There was no significant difference in yield between any of the lines tested. Average yields of entries tested for multiple years have been declining since 1999. The most likely cause of the yield reduction is the drought that the state of Montana has been in for the past three years. Under crop-fallow conditions, there has not been enough precipitation to recharge the soil moisture in fallow years, coupled with lack of rainfall during the growing season.

FUTURE PLANS: The statewide dryland winter triticale evaluations have been planted for continuation in 2002 at Southern Agricultural Research Center.

Table 1. Performance of 15 triticale cultivars and experimental lines tested under dryland conditions near Huntley, Montana during 2001. Cultivars listed alphabetically. (Exp. 01T408).

Cultivar	1/ Grain Yield			Test Weight	Grain Moisture	2/ Grain Protein	Plant Height	Heading Date	
	2001	2000-2001	1999-2001			%		Julian	Calendar
	lb/ac			lb/bu	%	%	inches		
91T113-C12-5	2235.2	3124.6	3586.3	56.3	9.0	16.0	23.5	147.3	May 26
B0010	1690.4	2490.8	2884.2	51.9	8.2	17.3	22.7	158.7	Jun 06
Frostat	2125.8			55.5	8.4	16.8	29.3	152.7	May 31
K99SRT103	1598.5			56.5	8.7	16.2	23.5	150.7	May 29
K99SRT119	1550.4			55.5	8.8	15.9	22.0	151.3	May 30
KT940794-8007	2273.8	2586.9		53.7	8.8	17.1	22.7	151.0	May 30
KT940874-8002	1401.4	2457.4		50.4	8.5	19.1	24.1	157.7	Jun 05
KT941256-8006	2365.3	3181.4	3381.9	53.6	8.9	16.8	25.6	153.7	Jun 01
KT941256-8007	2553.0	2783.1		54.3	8.6	16.4	19.9	152.7	May 31
KT941289	1725.8	2889.3	3278.5	53.6	8.6	15.9	24.1	151.3	May 30
KT941864-5002	1915.8	2658.3	3064.7	54.2	8.8	15.6	25.8	152.0	May 31
KW940393W5001a	2670.9	3266.3	3610.1	56.6	8.7	16.8	25.8	150.0	May 29
RAH173-F93	1807.6	2668.8	3228.9	54.0	8.0	16.1	23.0	151.7	May 30
Tiber (HRWW check)	2489.8			61.2	9.3	17.5	22.9	156.0	Jun 04
UGO	2183.7			49.9	9.0	16.8	23.6	153.0	Jun 01
UGO Polish	2259.5	2859.3	2941.9	52.1	8.0	17.9	27.4	155.7	Jun 03
Average	2052.9	2815.1	3247.1	54.3	8.6	16.8	24.1	152.8	May 31
LSD (p=0.05)	ns	ns	ns	3.0	0.6	-	ns	3.7	
CV%	40.8	25.8	18.2	3.3	4.3	-	15.3	1.4	

1/ Yields are in pounds per acre adjusted to 13.0 percent moisture content.

2/ Grain proteins are based on grain dry matter.

ns Indicates no significant difference between cultivars within a column based on Fisher's protected LSD (p=0.05).

Huntley Dryland Statewide Triticale (Exp. 01T408)

Planted: September 26, 2000
Harvested: August 17, 2001
Fertility: 18-46-00, 100 lb/a preplant incorporated, September 1, 2000
Herbicide: Harmony Extra, 0.33 oz/a; Bronate, 1 pt/a; R-11, 1 pt/a, April 25, 2001
Insecticide: Di-Syston 8E, 16 oz/a preplant incorporated, September 13, 2000
Previous Crop: summer fallow
Precipitation: 12.17 inches