

PROJECT TITLE: The evaluation of winter triticale, and winter barley varieties.

PROJECT LEADER: G.F. Stallknecht

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OBJECTIVES: To evaluate winter triticale, and winter barley cultivars for adaptation and yield potential for south-central Montana.

RESULTS: Table 1 gives the data for the winter triticale trial. Yields were quite good, ranging from 39 to 85 Bu/A and four triticale lines significantly outyielded, and several others yielded more (but not significantly) than Tiber winter wheat. Yields were based on wheats test weight of 60 Lb/Bu, while the official test weight of triticale is 50 Lb/bu. Test weights were good for the triticale ranging from 47 to 56 Lb/Bu. Several were shorter than average as well as shorter than winter wheat. Proteins were low, possibly due to excess moisture from filling through harvest.

Table 2 shows the data for the winter barley trial. Yields were also quite good, with Westbred Sprinter yielding the most (76.08 Bu/A), and several OR, ID, and WA selections not significantly less. Three Texas lines were lowest yielding, possibly due to very poor tillering and early maturity. Test weights were low, although test weights were low this year for all crops.

SUMMARY: This and previous data indicates winter triticale has potential for this area. An added advantage of triticale is it is higher in lysine content than other cereals, which has advantages for use as human, swine, or chicken feed stuffs. Winter barley also appears adapted to this area, however test weight appears to be a drawback. With elevators docking growers for less than 48 Lb/Bu, most of these lines would have been docked. Work is continuing to try and bring up the test weights, and improvements have been made, winter hardiness has improved, and a significant increase in the test weight has been made in the last 5-10 years.

FUTURE PLANS: The evaluation of these two crops will continue, to find adaptable lines, and to find improved test weight lines of winter barley. Some two row winter barleys are being developed and this should help the test weight situation.

TABLE 1 . 1993 DRYLAND WINTER TRITICALE VARIETY TRIAL
SARC, HUNTLEY, MT.

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VARIETY	YIELD BU/AC	TEST WT LB/BU	HEAD DATE	PLANTHT INCHES	% PROTEIN
23 FT86044-B0010	85.68	52.68	153.00	30.75	10.62
24 FT86044-B009	78.75	52.45	155.00	30.50	11.67
10 BOB	75.24	52.03	155.00	34.50	12.15
20 TL 335	73.35	56.13	149.50	33.00	10.94
12 FT86044-B0011	70.81	53.60	153.50	28.75	12.10
9 PRESTO	69.81	55.33	144.00	36.50	12.10
16 FT87073 H1029	68.91	52.65	149.00	29.50	13.39
18 FT90477 P001	68.21	52.97	148.00	27.25	13.40
14 FT86034 H1001	65.66	53.93	155.00	31.50	12.81
22 TL 888	65.18	53.97	152.00	36.25	11.36
15 FT87073 H1016	64.87	50.78	150.50	31.00	13.61
19 FT9458 H1004	64.82	47.95	150.50	29.25	11.46
2 FT 228	64.71	52.93	150.00	27.75	13.03
21 87DL01030	64.25	53.85	152.00	38.50	12.72
13 FT87076 H1021	62.49	51.15	149.00	28.75	13.47
11 CELIA	61.92	52.90	150.00	27.75	13.96
17 FT90477 H1005	61.75	52.08	149.00	29.00	13.61
1 FT 229	61.58	53.53	149.50	33.75	12.91
8 TIBER	60.42	60.30	154.00	31.50	13.66
3 FT 235	60.05	52.63	151.00	27.25	12.97
4 NEWCALE	56.72	50.53	145.00	33.75	14.01
6 TRILLIUM	55.07	51.93	149.00	44.50	12.31
7 PIKA	49.75	53.32	155.00	47.25	12.89
5 WINTRI	39.26	49.53	155.00	48.25	13.41

***** STATISTICAL TABLE *****

EXPERIMENTAL MEANS	64.55	52.88	150.98	33.20	12.69
TOTAL OBSERVATIONS	96.00	96.00	48.00	96.00	96.00
NO. OF REPLICATIONS	4.00	4.00	2.00	4.00	4.00
NO. OF VARIETIES	24.00	24.00	24.00	24.00	24.00
REP. MEAN SQUARE	3562.16	44.05	1.69	71.82	27.04
VAR. MEAN SQUARE	350.60	22.11	18.98	146.59	3.69
ERROR MEAN SQUARE	59.29	2.34	.64	3.89	.35
ERROR DEGREES OF FREEDOM	69.00	69.00	23.00	69.00	69.00
F TEST FOR REPS.	60.08	18.81	2.62	18.47	77.48
F TEST FOR VAR.	5.91	9.44	29.47	37.70	10.58
STANDARD ERROR	7.70	1.53	.80	1.97	.59
STANDARD ERROR OF THE MEAN	3.85	.77	.57	.99	.30
C.V. 1: (S/MEAN)*100	11.93	2.89	.53	5.94	4.65
C.V. 2: (S OF MEAN/MEAN)*100	5.96	1.45	.38	2.97	2.33
LSD (0.05)	10.86	2.16	1.66	2.78	.83

PLANTING DATE: 10/7/92
HARVEST DATE : 8/4/93

93WNTRIT.WTD
TRITPROM.WTD

TABLE 2 . 1993 DRYLAND WINTER BARLEY NURSERY, SARC, HUNTLEY, MT. 184

	VARIETY	YIELD BU/AC	TESTWT LB/BU	PLANTHT INCHES	HEAD DATE
20	SPRINTER	76.08	47.50	21.50	149.50
34	SDM 204-B	73.85	43.00	19.50	149.50
10	OR WF 8410	71.77	46.60	15.50	144.00
22	WA 2531-81	71.41	43.00	18.50	145.50
19	86Ab474	70.60	43.70	21.00	145.50
18	86Ab440	69.44	44.00	20.50	143.00
11	WA 2607-80	69.15	42.70	21.50	148.50
35	86Ab640	68.12	43.20	23.00	148.50
2	SCHUYLER	66.88	45.60	22.00	148.50
9	HUNDRED (WA 1574-77	66.58	39.50	20.00	150.50
25	OR FB 81019	66.41	44.10	19.50	146.50
21	ORW-4	65.86	44.00	21.50	147.00
13	OR WF 8413	65.54	41.70	19.50	147.00
23	WA 1996-87	65.08	43.70	20.00	150.50
28	OR W-5	64.50	43.10	23.00	146.50
15	OR FB 84279 GP2	64.50	40.80	24.00	150.50
12	GWEN (OR FB 77796)	64.10	45.60	24.50	141.00
4	HESK	63.62	42.30	22.00	147.50
5	SCIO	62.69	41.60	21.00	146.00
27	OR FB 84435-91B	61.78	43.40	21.00	145.50
6	EIGHT-TWELVE (79Ab81	61.63	45.30	20.50	147.50
3	BOYER	61.21	41.30	22.50	148.50
14	PERKINS (NE 851808)	60.13	48.00	22.50	143.50
17	OR 1861147	59.51	42.30	21.50	147.50
8	POST 90 (OK 82850)	59.39	43.80	20.50	144.00
16	OR 1861018	59.29	43.90	26.50	150.00
26	OR FB 84435-91A	59.14	42.40	21.00	145.50
36	88Ab926	58.77	41.60	22.50	148.50
1	KAMIAK	57.43	43.20	26.00	143.00
29	OR FB 87107-A2012	56.61	43.90	17.50	151.00
7	SHOWIN	55.90	41.50	19.00	147.50
24	WA 1997-87	54.59	45.60	20.00	147.00
30	OR FB 87107-A2001	47.82	43.60	19.00	152.50
31	TX 89D8042	40.65	42.00	27.00	139.50
33	TX 90D9771	39.26	40.10	23.50	140.00
32	TX 89D8036	38.23	41.60	27.50	139.00

***** STATISTICAL TABLE *****

	YIELD	PLANTHT	HEAD
EXPERIMENTAL MEANS	61.60	21.56	146.54
TOTAL OBSERVATIONS	144.00	72.00	72.00
NO. OF REPLICATIONS	4.00	2.00	2.00
NO. OF VARIETIES	36.00	36.00	36.00
C.V. 1: (S/MEAN)*100	9.36	7.07	1.06
C.V. 2: (S OF MEAN/MEAN)*100	4.68	5.00	.75
LSD (0.05)	8.09	3.09	3.16

93WINBAR.WBD
93WINBAR.STT

DATE PLANTED: 9/25/92
DATE HARVESTED: 7/30/93