

PROJECT TITLE: Off station yield comparison studies, with winter spelt, winter barley, winter wheat, spring oats, barley and spring triticale offstation, dryland, Billings.

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PROJECT PERSONNEL: K.M. Gilbertson, SARC; John Ranney, Yellowstone Co. Agent; Dover Sindelar, Grower, Billings

OBJECTIVES: To compare the yield and quality of winter spelt to spring oats, with hard red winter wheat, winter and spring barley, and spring triticale as comparison checks.

RESULTS: Yield and agronomic data of the winter cereal crops are described in Table 1, and the spring cereals in Table 2. The 1993 precipitation was below average early stressing the cereals, thus the yields were quite low.

The 1993 yield of 1180 Lb/A of Tiber winter wheat represents a yield of 20 Bu/A, while the normal average would range from 30 to 40 Bu/A. In 1993 Wille spelt (1297 lb/A) and FB 77796 winter barley (1290 Lb/A) produced higher yields, although not significantly, than Tiber winter wheat. Winter barley yields were equal or better than some lines in 1993.

When winter spelt was compared to spring oats, oats produced a slightly (but not significantly) higher yield. Test weights of the spelt cultivars were slightly higher than oats in 1993. The comparison of winter spelt to spring barley yields are similar to the spelt/oats comparisons, with some barleys out yielding spelt. Spring triticale yields in 1993 was higher than any other crop, possibly due to regrowth caused by early stress and late high precipitation.

SUMMARY: The data presented in this report show that when early precipitation is limited, and subsequent precip. is above average triticale, oats and some barley varieties grown in Montana can out yield the Montana spelt cultivar. However during years of normal or below normal growing season moisture levels, spelt will out yield both oats and barley on a pound per acre basis. Thus there appears to be advantages to produce a winter spelt over spring oats, if the producer intends to utilize his crop for feed. As yet there is not a readily available market for spelt, with the exception of organic production for human food uses.

FUTURE PLANS: The winter cereal vs spring cereal crop comparison will continue for three years for evaluation of yield and quality.

TABLE 1 . 1993 SARC OFF STATION DRYLAND WINTER GRAIN COMPARISON
SPELT, W/WHEAT, W/BARLEY, SINDELAR FARM.

	VARIETY	YILD LB/AC	TESTWT LB/BU	PLANTHT INCHES	HEAD DATE
1	WILLIE SPELTZ	1297.56	42.87	31.00	162.33
8	FB77796 BARLEY	1290.71	45.33	17.33	143.67
10	TIBER WINTER WHEAT	1180.19	60.67	21.33	155.33
9	SCHUYLER BARLEY	1137.07	43.10	16.67	152.00
6	CHAMP SPELTZ	903.75	45.70	28.00	160.00
4	SINDELAR MIX SPELTZ	903.66	44.37	27.00	161.67
7	KAMIAK BARLEY	886.23	45.23	19.00	143.67
3	SINDELAR DARK SPELTZ	775.80	43.73	28.00	160.67
2	SINDELAR LIGHT SPELT	638.60	37.10	27.67	162.00
5	SP 949 SPELTZ	578.23	39.33	25.33	162.00

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

EXPERIMENTAL MEANS	959.18	44.74	24.13	156.33
TOTAL OBSERVATIONS	30.00	30.00	30.00	30.00
NO. OF REPLICATIONS	3.00	3.00	3.00	3.00
NO. OF VARIETIES	10.00	10.00	10.00	10.00
C.V. 1: (S/MEAN)*100	22.45	8.73	11.49	.87
C.V. 2: (S OF MEAN/MEAN)*100	12.96	5.04	6.64	.50
LSD (0.05)	369.43	6.70	4.76	2.34

SIND93WC.WCD
SIND93WC.STT

DATE PLANTED: 10/06/92
DATE HARVESTED: 7/30/93

TABLE 2 . 1993 SARC OFF STATION DRYLAND SPRING GRAIN COMPARISON,
TRITICALE, BARLEY, OATS, SINDELAR FARM.

	VARIETY	YIELD TESTWT PLANTHT HEAD			
		LB/AC	LB/BU	INCHES	DATE
9	WAPITI TRITICALE	1617.22	50.40	29.67	160.00
10	KARL TRITICALE	1285.38	52.73	24.33	155.00
3	BOWMAN BARLEY	1127.02	51.37	20.33	155.00
2	MONIDA OATS	1104.88	37.10	24.00	163.00
4	GALLATIN BARLEY	1095.45	51.07	18.33	160.00
1	OTANA OATS	1081.14	38.37	26.00	163.00
6	STEPTOE BARLEY	995.16	41.97	19.33	155.33
7	WAXBAR BARLEY	919.40	56.60	20.67	163.00
5	CLARK BARLEY	891.03	48.83	18.33	161.33
8	SHONKIN BARLEY	663.32	57.67	22.00	161.33

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

EXPERIMENTAL MEANS	1078.00	48.61	22.30	159.70
TOTAL OBSERVATIONS	30.00	30.00	30.00	30.00
NO. OF REPLICATIONS	3.00	3.00	3.00	3.00
NO. OF VARIETIES	10.00	10.00	10.00	10.00
C.V. 1: (S/MEAN)*100	20.52	2.36	6.69	.20
C.V. 2: (S OF MEAN/MEAN)*100	11.85	1.36	3.86	.11
LSD (0.05)	379.51	1.96	2.56	.54

93SPSIND.SGD
93SPSIND.STT

DATE PLANTED: 4/02/93
DATE HARVESTED: 7/30/93