

PROJECT TITLE: The evaluation of winter spelt germplasm under dryland conditions.

PROJECT LEADER: G.F. Stallknecht

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OBJECTIVES: To evaluate germplasm available from the Small Grain Germplasm Collection for agronomic characteristics, adaptability, and yield potential for south-central Montana.

RESULTS: We started with 300 selections from the over 1100 available, and have selected 42 to continue based on yield, protein and or other traits. Of these, 6 germplasm lines and 3 currently available cultivars yielded as well as Tiber winter wheat. Yields ranged from 1700 to 3200 LB/A. With test weights ranging from 27.7 to 38 Lb/Bu.

SUMMARY: Spelt is grown presently in MT and ND as a high fiber, high energy feed for livestock. In the Midwest it is also grown for human food. Spelt has the potential due to its higher protein and high fiber content.

FUTURE PLANS: We will continue to evaluate these spelt lines for yield and quality for consideration as both human and livestock food.

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

VARIETY	YIELD LB/AC	TEST WT LB/BU	HEAD DATE	PLANTHT INCHES
PI348528 69Z6.706-SPAIN	3261.50	28.00	157.00	36.00
1 TIBER W/WHEAT	3211.03	58.40	151.00	33.67
PI355656 SPELTA 35-SWITZERLAN	3023.93	38.70	160.00	39.00
5 WILLIE	2978.53	32.20	159.00	38.00
4 SP 949	2940.20	32.60	160.50	38.00
PI348337 69Z6.508-BELGIUM	2887.10	31.20	159.00	36.67
6 SINDELAR LT	2799.20	31.60	160.50	38.33
PI347850 ALTGOLD-SWITZERLAND	2728.97	32.20	159.00	37.00
PI272574 I-1-3540-HUNGARY	2727.13	30.50	152.50	37.67
PI348212 69Z6.378-GERMANY	2702.17	31.70	160.00	40.67
8 SINDELAR MIX	2685.53	30.70	160.00	37.67
PI168682 ALSTROUM-USA VIRGINI	2664.63	29.80	152.00	37.00
PI348054 69Z6.213-GERMANY	2647.10	30.30	161.00	40.00
2 GR 900	2610.47	28.60	156.00	36.67
3 CHAMP	2605.67	29.60	156.00	37.67
PI348065 69Z6.224-GERMANY	2579.90	31.00	160.50	34.33
PI347948 69Z6.103-SWITZERLAND	2563.37	30.40	158.50	40.33
9 VITA II	2558.40	28.60	158.50	35.33
PI347971 69Z6.127-SWITZERLAND	2542.90	30.70	158.50	34.67
PI348382 69Z6.554-BELGIUM	2542.10	29.30	160.50	37.67
PI347952 69Z6.107-SWITZERLAND	2508.93	31.70	158.50	40.00
PI295059 DEUTCHLAND-HUNGARY	2505.10	27.70	152.00	34.33
PI290513 FUGGERS BABENHAUSER-	2501.37	28.50	158.50	42.00
PI355618 BRAUNSCHWEIG 1300-GE	2474.80	30.60	158.00	39.67
PI348421 69Z6.594-BELGIUM	2449.67	31.60	160.50	34.33
PI355647 STRICKHOF ROTKORN-SW	2442.27	30.60	158.00	41.67
PI348109 69Z6.270-GERMANY	2427.00	32.80	159.50	39.33
PI348117 69Z6.279-GERMANY	2405.87	32.20	159.00	36.67
PI347852 69Z6.3-SWITZERLAND	2401.70	30.70	158.50	39.67
7 SINDELAR DK	2391.13	30.20	158.00	38.67
PI348043 69Z6.202-GERMANY	2381.47	33.40	161.00	37.33
PI348105 69Z6.266-GERMANY	2366.87	29.50	160.50	36.67
PI306550 -----ROMANIA	2326.70	28.60	151.00	35.00
PI348070 69Z6.230-GERMANY	2306.70	29.20	160.00	35.67
PI347954 69Z6.109-SWITZERLAND	2274.27	31.00	150.00	36.33
PI348150 69Z6.313-GERMANY	2259.07	31.80	160.00	33.33
PI348157 69Z6.320-GERMANY	2224.97	32.20	158.50	37.00
PI330559 -----UNITED KINGDOM	2194.93	30.70	151.00	38.33
PI347888 69Z6.40-SWITZERLAND	2147.50	30.00	158.00	35.00
PI347893 69Z6.45-SWITZERLAND	2141.37	29.90	159.00	39.00
CI 1772 RED WINTER-USA WASHI	2119.93	30.50	151.00	36.67
PI348099 69Z6.260-GERMANY	2112.60	29.50	161.00	35.67
PI348153 69Z6.316-GERMANY	2077.07	31.10	160.00	34.67
PI272573 I-1-599-HUNGARY	2054.67	29.50	152.00	38.67
PI347991 69Z6.147-SWITZERLAND	2046.73	31.20	158.00	35.67
PI355556 T 112-GERMANY	1972.53	31.70	157.00	37.33
PI348203 69Z6.368-GERMANY	1852.93	30.80	159.50	38.00
PI295063 UNGARN-HUNGARY	1837.33	28.00	152.00	38.67
PI355579 SK 30-SWITZERLAND	1708.83	32.70	152.00	40.00
PI347887 69Z6.39-SWITZERLAND	1698.63	31.20	158.00	41.33

TABLE 1 . (CONT) 1993 WINTER SPELT.

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

	YIELD LB/AC	HEAD DATE	PLANT HT INCHES
EXPERIMENTAL MEANS	2437.46	157.40	37.46
TOTAL OBSERVATIONS	150.00	100.00	150.00
NO. OF REPLICATIONS	3.00	2.00	3.00
NO. OF VARIETIES	50.00	50.00	50.00
REP. MEAN SQUARE	*****	12.96	303.86
VAR. MEAN SQUARE	*****	22.94	13.84
ERROR MEAN SQUARE	*****	.39	7.14
ERROR DEGREES OF FREEDOM	98.00	49.00	98.00
F TEST FOR REPS.	140.16	33.35	42.56
F TEST FOR VAR.	3.41	59.03	1.94
STANDARD ERROR	329.40	.62	2.67
STANDARD ERROR OF THE MEAN	190.18	.44	1.54
C.V. 1: (S/MEAN)*100	13.51	.40	7.13
C.V. 2: (S OF MEAN/MEAN)*100	7.80	.28	4.12
LSD (0.05)	533.74	1.25	4.33

93WSPELT.WSD

SPELTM.WSD

PLANTING DATE: 10/1/92

HARVEST DATE: 8/4/93