

PROJECT TITLE: Evaluation of spelt lines for adaptation as a grain or forage crop in Central Montana.

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OBJECTIVES:

To identify winter spelt varieties adapted to Montana environments for yield, winter hardiness, resistance to lodging, and for use as livestock or human food.

RESULTS:

Mid spring plant density and late spring canopy cover varied significantly between winter spelt varieties and lines in two nurseries seeded on till fallow (See Tables 74 & 75). The nursery seeded in NW3 was on level ground while SE11 was on a incline with exposure to west winds. Blowing dust was a major factor in late March through early May. Plant mortality is attributed to a combination of winter tenderness which was accentuated by spring burial and cutting. It is readily apparent, in visual assessments, none of the spelt entries were as hardy as the Tiber winter wheat check or the winter triticale entries in an adjacent trial in field SE11. Spelt appears to have a strong spring tillering capacity as shown by June visual assessment of plant canopy cover. Heading occurred over a 12 day period and plant heights ranged from 26 to 45 inches across the two trials. There was some differentiation between high grain producers and high forage producers. Sava had the highest grain yield and SP949 produced the highest forage yield.

SUMMARY:

Winter survival on tilled fallow is a weakness of all of the triticale lines evaluated in these two trials. Grain and forage yields are suitable relative to those of other cereals and annual forages.

FUTURE PLANS:

Evaluation of spelt lines to use as an annual forage crop will continue at the Central Agricultural Research Center.

Table 74 2001 Winter spelt variety trial - grain and forage yield performance (NW3).
 Exp. Wspelt Central Agricultural Research Center, Moccasin, Montana.

ID	Stand	Plant Density	Plant Height	Heading Date	Forage Yield	Grain Yield
	%	plt/3ft	inches	day	t/a	lbs/a
Tiber	96	33	31	168	3.50	2719
Maverick	94	20	35	168	3.74	3470
Sammy	82	19	33	169	3.45	3583
Sam (Sam-my)	91	16	36	173	3.25	3080
Comet	85	23	28	168	3.02	3237
Sungold	78	20	36	173	3.45	3576
Tabasco	90	16	37	173	2.87	2357
10238925	91	23	38	174	3.68	3463
Sava	83	18	33	173	3.52	3632
SP949	93	30	40	175	3.99	3375
PI508B	97	32	37	177	3.73	3262
Brown Spelt	93	26	38	174	2.88	2597
PI3206	95	32	40	177	3.65	3149
PI348148	95	21	40	176	3.22	2760
PI348159	97	36	41	177	3.75	3103
PI618Braunschwe	93	25	40	180	3.64	3148
SindelarLite	95	34	41	179	3.47	2765
Bangerter	87	22	42	179	3.81	3373
GR900	85	19	40	175	3.67	3454
Batting	90	18	45	175	2.74	1992
NewYork	78	19	42	178	2.71	2291
Rocquinn	91	28	40	176	2.78	2563
Average	90.0	24.2	37.8	174.4	3.4	3054
CV (s/mean) %	6.0	14.3	3.6	0.6	15.5	19.3
LSD (cal by t)	9.0	5.7	2.2	1.6	ns	968.8

Seeded: October 4, 2000 at a depth of 3/4 inch

Harvest: Aug 3, 01

Fertilizer: 50 lbs of 20-20-0 placed with the seed and 67 lbs of N were broadcast in fall of 2000

Previous Crop: Fallow

Annual Precipitation: 10.6 inches

Herbicide: Bronate 1.5pts/a on May 8, 2001

Table 75 2001 Spelt winter survival and forage yield (SE11).
 Exp. SpeltWS Central Agricultural Research Center, Moccasin, Montana.

ID	Percent Stand	Plant Density	Plant Height	Heading Date	Forage Yield
	%	plt/3ft	inches	days	t/a
TIBER	70	33	30	176	1.04
MAVERICK	18	8	29	178	0.75
SAMMY	23	16	28	178	0.21
SAM-MY	5	1	30	181	0.31
COMET	35	6	30	177	0.58
SUNGOLD	53	13	32	181	0.82
TABASCO	38	12	31	181	0.36
1023-89-25	15	4	34	182	0.61
SAVA	4	4	34	179	0.33
SP949	45	23	30	183	1.02
NEW YORK	30	15	32	180	1.07
PI 508-B	23	12	30	181	0.63
BROWN SPELT	65	17	33	181	1.05
PI 320-6	65	14	32	178	1.29
PI 348-148	75	16	37	182	1.16
PI 348-159	75	32	34	183	1.05
PI 618 Braunschwe	85	21	34	182	1.28
SINDELAR LITE	50	29	34	182	0.89
BANGERTER	45	19	36	181	0.98
GR900	35	9	36	181	0.79
BATTING	32	12	38	181	0.10
ROQUIN	22	9	35	181	0.17
Average	41.1	14.6	32.4	180.2	0.8
CV (s/mean) %	61.9	58.4	10.5	1.0	44.9
LSD (cal by t)	ns	17.7	ns	3.8	0.6

Seeded: 10/4/2000

Harvest: July 23, 01

Fertilizer: 67 lbs N broadcast in fall of 2000; 50 lbs of 20-20-0 placed with the seed

Herbicide: Bronate at 1 1/2 pts/a on May 11, 2001

Growing season precipitation: 7.29 inches

Crop year precipitation: 10.6 inches