

**PROJECT TITLE:** The evaluation of winter triticale and winter spelt selections for yield and quality when grown for forage production under dryland and irrigated cropping.

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**PROJECT PERSONNEL:** Dr. Donald Salmon, AG Canada, LaCombe, Alberta

**OBJECTIVES:** To evaluate winter triticale and spelt for forage yield and quality under dryland and irrigated cropping.

**RESULTS:** Tables 1 and 2 describe the yield, plant height, and date of heading data for the 1995 trial. Trical 102 was the only awnless (awns less than 3/8 inch in length) triticale selection in the trial, it is also at present the only winter awnless type available. Trical 102 is a very tall variety averaging 5 feet in height when at the soft dough stage of growth. while Trical 102 does have strong straw characteristics, at this height the variety is highly susceptible to lodging, and the lower yields reflect the effect of lodging in 1995. The triticale selections produced higher yields compared to the spelt selections, however only the awnless triticale Trical 102 could be harvested for hay since the other selections all have long stiff awns, whereas all the spelt selections are completely awnless. The data indicate that triticale head 5-7 days later than the spelt selections.

**SUMMARY:** the 1995 data on spelt and triticale forage yields are similar to the results obtained in 1994. Triticale selections tended to out yield spelt when harvested at the soft dough stage. However, with the exception of Trical 102- most triticale cannot be harvested for hay, but would have to be ensiled as green chop. Again in 1995 there is a significant forage yield advantage of the winter spelt over the spring hay barley and oat forage crops. The protein, ADF & NDF data has not been completed at this time. However, 1994 data indicated that the percent protein was significantly higher in spelt forage compared to the barley or oat hay forages. The 1994 and 1995 data suggests a significant yield and quality advantage of winter spelt over spring cereals for forage production.

TABLE 1. 1995 DRYLAND WINTER FORAGE TRIAL, SARC, HUNTLEY, MT.

TRITICALE 60#/A---SPELT 90#/A

VARIETY	YIELD PLANTHT HEAD	T/A DM INCHES	DATE	STAND	HARV
	%		DATE		
7 PRESTO - TRIT	4.83	42.33	155.00	.00	7/21
10 TRILLIUM - TRIT	4.83	52.33	161.00	.00	7/21
8 BOO10 - TRIT	4.77	39.33	164.00	.00	7/28
1 1 PI 355618 - SPELT	4.37	52.67	176.00	26.67	7/21
12 * PIKA - TRIT	4.33	61.67	167.00	.00	7/28
4 PI 355647 - SPELT	4.27	52.67	170.00	28.33	7/21
2 PI 348337 - SPELT	4.23	51.33	170.67	.00	7/21
5 * CHAMP - SPELT	4.13	49.00	168.33	80.00	7/21
6 PI 348528 - SPELT	3.97	47.33	167.33	80.00	7/21
11 **TRICAL 102 - TRIT	3.93	60.67	167.00	.00	7/28
3 * SINDELAR MIX - SPELT	3.87	47.33	169.67	56.67	7/21
9 TL 335 - TRIT	3.23	36.67	161.00	.00	7/28

\*\*\*\*\* STATISTICAL TABL \*\*\*\*\*

EXPERIMENTAL MEANS	T/A DM INCHES	DATE	STAND	YIELD PLANTHT HEAD
STANDARD ERROR OF THE MEAN				%
4.23	49.44	166.42	22.64	42.02
.19	.95	.19	14.33	63.29
7.81	3.34	.20	109.62	42.02
4.51	1.93	.12	63.29	42.02
.56	2.80	.57	42.02	42.02

C.V. 1: (S/MEAN)\*100  
 C.V. 2: (S OF MEAN/MEAN)\*100  
 LSD (0.05)  
 DRY W/FOR STAND PER

\* = Slight lodging  
 \*\* = Severe lodging

DATE PLANTED: 10/11/94

TABLE 2 . 1995 IRRIGATED WINTER FORAGE TRIAL, SARC, HUNTLEY, MT.

TRITICALE 90#/A---SPELT 120#/A

VARIETY	YIELD PLANTHT HEAD	T/A DM INCHES	DATE	STAND	HARV
	%				DATE
8 BOLO - TRIT	44.00	167.00	7/28	.00	7/28
10 TRILLIUM - TRIT	50.33	163.33	7/21	.00	7/21
7 PRESTO - TRIT	46.67	161.00	7/21	.00	7/21
9 TL 335 - TRIT	5.77	41.33	7/28	.00	7/28
12 * PIKA - TRIT	64.33	170.00	7/28	.00	7/28
5 * CHAMP - SPELT	55.67	174.00	7/21	.00	7/21
4 PI 355647 - SPELT	56.33	174.00	7/21	78.33	7/21
6 PI 348528 - SPELT	53.33	172.33	7/21	.00	7/21
2 PI 348337 - SPELT	53.00	176.00	7/21	.00	7/21
11 **TRICAL 102 - TRIT	59.00	165.00	7/28	.00	7/28
3 * SINDELAR MIX - SPELT	52.33	172.67	7/21	20.00	7/21
1 PI 355618 - SPELT	51.33	183.00	7/21	71.67	7/21

\*\*\*\*\* STATISTICAL TABLE \*\*\*\*\*

EXPERIMENTAL MEANS	STANDARD ERROR OF THE MEAN	C.V. 1: (S/MEAN)*100	C.V. 2: (S OF MEAN/MEAN)*100	LSD (0.05)
5.52	14.17	5.99	17.58	.73
52.31	170.19	5.99	17.58	3.17
5.52	14.17	5.99	17.58	.73
52.31	170.19	5.99	17.58	3.17
5.52	14.17	5.99	17.58	.73
52.31	170.19	5.99	17.58	3.17
5.52	14.17	5.99	17.58	.73
52.31	170.19	5.99	17.58	3.17
5.52	14.17	5.99	17.58	.73
52.31	170.19	5.99	17.58	3.17

\* = Slight lodging  
 \*\* = Severe lodging

DATE PLANTED: 11/10/94