

PROJECT TITLE: **TIMOTHY HARVEST TIMING/FORAGE YIELD TRIAL**

PROJECT LEADER: Duane Johnson, NWARC
Louise Strang, NWARC

OBJECTIVE: This study was initiated in 2005 to compare the forage yield potential of several germplasm lines of timothy grass (*Phleum pratense*) harvested at three different maturity stages.

METHODS:

The seed was collected in August, 2004, from a nursery containing 359 different germplasm accessions. Five of these accessions plus a bulk sample of common timothy seed were seeded at 3.6 lbs/a in 100 ft² plots arranged in a split block design with harvest maturity stages as main plots and germplasm lines as subplots randomized within each main plot. Each set of treatments was replicated 3 times. All maturity treatments were harvested twice, and the jointing and flag leaf treatments were harvested 3 times.

RESULTS:

For first cutting yields, timothy cut at the heading stage produced the most forage for all lines tested. When harvested at the flag leaf stage, however, PI 206717 produced significantly more forage than line PI 262469. At the second cutting, the heading stage harvest treatment again produced more forage than the earlier stages, and line PI 419641 produced significantly more forage than PI 419615, 235548, and 206717. Over the whole season, harvesting at the jointing stage resulted in significantly less forage yield than harvesting at the later stages. Although not significant, PI 419641 and 262469 had the highest yields when harvested at heading and PI 419615 when harvested at jointing.

[See table on next page.]

**Timothy Harvest Timing/Forage Yield Trial
KalisPELL, 2006**

First Cutting

<u>Cultivar</u>	<u>Stage</u>			mean
	<u>jointing</u>	<u>flag leaf</u>	<u>heading</u>	
235548	1.07	1.55	2.26	1.63
206717	0.97	1.90	2.27	1.71
262469	1.08	1.26	2.30	1.55
419641	1.14	1.83	2.31	1.76
419615	1.06	1.78	2.11	1.65
bulk	1.30	1.43	2.00	1.58
mean	1.10	1.63	2.21	
<u>Cultivar means</u>		<u>Stage means</u>		<u>Cult x Stg</u>
Pr>F	0.0002			
LSD(0.05)	0.40	0.28		0.48
CV(%mean)	24.9			

Second Cutting

<u>Cultivar</u>	<u>Stage</u>			mean
	<u>jointing</u>	<u>flag leaf</u>	<u>heading</u>	
235548	0.24	0.46	0.62	0.44
206717	0.30	0.38	0.57	0.41
262469	0.33	0.46	0.79	0.53
419641	0.25	0.52	0.91	0.56
419615	0.31	0.58	0.70	0.53
bulk	0.18	0.45	0.87	0.50
mean	0.27	0.48	0.75	
	<u>Cultivar means</u>		<u>Stage means</u>	<u>Cult x Stg</u>
Pr>F	< 0.0001			
LSD(0.05)	0.11		0.08	0.19
CV(%mean)	23.6			

Third Cutting

<u>Cultivar</u>	<u>Stage</u>		mean	
	<u>jointing</u>	<u>flag leaf</u>		
235548	0.51	0.64	0.57	
206717	0.46	0.60	0.53	
262469	0.51	0.39	0.45	
419641	0.51	0.59	0.55	
419615	0.51	0.78	0.64	
bulk	0.48	0.49	0.48	
mean	0.50	0.58		
	<u>Cultivar means</u>		<u>Stage means</u>	<u>Cult x Stg</u>
Pr>F	0.5506			
LSD(0.05)	NS		NS	NS
CV(%mean)	33.8			

Total Yield

<u>Cultivar</u>	<u>Stage</u>			mean
	<u>jointing</u>	<u>flag leaf</u>	<u>heading</u>	
235548	1.82	2.65	2.88	2.45
206717	1.40	2.88	2.83	2.37
262469	1.91	2.12	3.10	2.38
419641	1.89	2.94	3.22	2.69
419615	1.88	3.14	2.81	2.61
bulk	1.95	2.38	2.87	2.40
mean	1.81	2.69	2.95	
	<u>Cultivar means</u>		<u>Stage means</u>	<u>Cult x Stg</u>
Pr>F	0.0011			
LSD(0.05)	0.51		0.36	0.88
CV(%mean)	21.4			