PROJECT TITLE: **2002 IRRIGATED INTRASTATE ALFALFA YIELD TRIAL**

PROJECT COOPERATORS: Dennis Cash, MSU – Bozeman
Duane Johnson, MSU – NWARC
Louise Strang, MSU - NWARC

OBJECTIVE: Compare yield potential of new releases and experimental lines with older, established cultivars in an irrigated/high rainfall environment.

METHODS:

The experiment was established on 5/8/02. Fourteen cultivars were seeded in 5-ft by 20-ft plots consisting of 7 rows spaced 6-inches apart. Seeding rate was 8 lbs/acre pure live seed, and seeding depth was 0.5 in. Monoammonium phosphate fertilizer (11-52-0) was applied preplant at a rate of 400 lbs/acre and at 120 lbs/acre each spring following. The experimental design was a randomized complete block with 14 cultivars and four replications.

Crop year precipitation was 22.81 inches. Average monthly temperatures were 43.9, 52.6, 60.7, 69.1, and 63.8 degrees F from April to August, respectively.

Forage yield harvest dates were 6/21and 7/27/06. The trial was terminated after the second harvest. Plots were harvested with a sickle-bar research plot swather. Harvest area was 100 ft^2. After recording the fresh harvest weight, a subsample of approximately 500 g was taken, weighed, dried at 60°C in a forced air oven for 48 to 72 h, and reweighed to determine DM content.

Analysis of variance was calculated by the ANOVA procedure of XLSTAT Ver.7.5 (2004). Critical value for a significant F-test was tested at P=0.05. Treatment effects were compared by protected LSD when the F test for treatment was significant.

RESULTS:

There were no significant differences in yield among the 14 varieties tested in 2006. Over the 4 years of the study, total production was statistically similar for all entries.

[See table on next page.]

2006 Summary of the
2002 IRRIGATED INTRASTATE ALFALFA YIELD TRIAL

Cultivar	*H-1* Yield	*H-2* Yield	2006 Total Yield	2005 Total Yield	2004 Total Yield	2003 Total Yield	2003-06 Total Yield	%Mean
	----------tons DM/acre----------							
Ladak 65	1.79	1.48	3.26	**3.96**	6.13	5.32	18.66	95
Wrangler	1.78	1.59	3.37	3.76	6.09	5.28	18.50	94
Shaw	1.83	1.57	3.41	**4.01**	6.50	5.82	19.74	101
Cooper	1.94	1.58	3.52	**4.33**	6.75	5.82	20.42	104
Plumas	1.86	1.65	3.50	**4.30**	6.55	5.99	20.34	104
Ameristand 403T	1.77	1.50	3.28	**4.21**	6.31	5.61	19.40	99
Ladak DL	1.84	1.67	3.52	3.76	5.86	5.39	18.53	94
HybriForce 400	2.05	1.92	3.96	3.73	6.11	5.59	19.39	99
HybriForce-420/Wet	1.97	1.79	3.75	**4.24**	6.57	5.96	20.52	105
XTRA-3	1.97	1.71	3.68	**4.18**	6.43	5.79	20.08	102
6420	1.78	1.72	3.51	**3.96**	6.37	5.91	19.75	101
Rebel	2.01	1.62	3.63	**3.97**	6.31	5.73	19.64	100
Rugged	1.81	1.76	3.57	**4.07**	6.37	5.58	19.58	100
WL 319HQ	1.86	1.71	3.57	**4.08**	6.64	5.69	19.98	102
mean	1.88	1.66	3.54	4.04	6.36	5.68	19.61	
LSD(0.05)	NS	NS	NS	0.55	0.25	0.62	NS	
Pr>F	0.7530	0.3528	0.6306	0.047	0.228	0.375	0.4820	
CV(%mean)	11.8	13.2	11.6	9.5	2.8	7.6	7.2	

Yield values in **bold** are not significantly different (P=0.05) from the highest yield in the same column.

Seeded 5/8/02

Fertilizer: 13 lbs N + 62 lbs P_2O_5 - 4/15/05
Herbicide: 2,4-D + Banvel - 5/10/05