

## ALFALFA FORAGE VARIETY TRIAL, 1996-2000

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### Purpose

The purpose of this alfalfa variety trial is to compare the yield potential of 32 alfalfa varieties in a five year life of stand harvested four times per year.

### Procedures

The variety trial was established in August of 1995, following a wheat crop. Pre-plant fertilizer was 550 lb/acre of 0-46-0 plus 200 lb/acre of sulfur broadcast and disked in. Plots were seven rows of alfalfa planted 6 inches apart on beds 60 inches wide by 20 feet long. Thirty-two varieties of alfalfa were entered into the trial, each replicated four times in a randomized complete block experimental design. Alfalfa was seeded August 23, and 1 inch of sprinkler irrigation water was applied after planting.

On September 10, Poast at 2 pints/acre and 2,4-DB at 2 quarts/acre were applied. On November 11, a tank-mix of Kerb at 2 lb ai/acre plus Sencor at 2 lb ai/acre plus Diuron at 2 lb ai/acre was applied to the border area around the plots. On March 22, Kerb 50W at 1.5 lb ai/acre was applied, and incorporated by rainfall that day.

One 8-hour sprinkler irrigation of 2.4 inches of water was applied May 7, and the first cutting was taken May 28. Plots were sampled by cutting a 30-inch swath from the center of each plot using a flail mower. The fresh hay was weighed, and the moisture content was determined by drying samples from eight randomly selected plots in a forage dryer. The next irrigation was 2.5 inches of water applied June 3 and 4. Another 2.5 inch irrigation application was applied June 18 and 19, and the second cutting was taken July 2. The third cutting was taken July 31, and the fourth cutting was taken September 11, with irrigation applied as needed during the summer.

Variety differences in yield and protein were compared using ANOVA and protected least significant differences at the 5 and 10 percent levels.

### Results and Discussion

The average total yield of all the alfalfa varieties in the trial for the first year for four cuttings was 8.81 ton/acre, based on 12 percent moisture content (Table 1). Significant differences in yield were found in the third cutting at the 10 percent probability level, and in the fourth cutting at the 5 percent probability level. The low overall first year yield and lack of detectable differences in total yield among the alfalfa varieties at the beginning of the season may be attributable to non-uniform application of the sprinkler

irrigation water. In future years the irrigation system will include an additional sprinkler line in the plots to improve irrigation water application uniformity.

The information on varieties' resistance to pests in Table 2 was provided by participating seed companies and/or the Certified Alfalfa Seed Council. Most of the varieties have some degree of resistance to diseases and pests that could limit hay production in our area. Growers should choose varieties that have stronger resistance ratings for known disease or pest problems in their fields as well as demonstrated potential for high yield.

Table 1. Alfalfa variety trial first year forage yields and first cutting forage protein and ADF reported at 88 percent dry matter. Malheur Experiment Station, Oregon State University, Ontario, Oregon, 1996.

Variety or blend	1st 5/28	2nd 7/2	3rd 7/31	4th 9/11	1996 Total	Protein	ADF
	----- ton/ac -----					%	%
Sterling	3.44	2.72	1.64	1.84	9.64	20	26
W-L 252HQ	3.22	2.77	1.49	1.99	9.48	20.4	25.9
Wrangler	3.3 0	2.58	1.54	1.91	9.33	19.5	28.4
Tahoe	2.83	2.76	1.73	1.98	9.3 0	19.3	27.1
330	3.51	2.26	1.63	1.91	9.3 0	19.9	26.5
UN 13	2.92	2.55	1.65	2.09	9.21	19.9	25.2
CUF-101	2.92	2.52	1.73	1.95	9.11	19.9	25.8
Magnum III	3.24	2.35	1.53	1.9 0	9.02	19.2	27.9
Sevelra	3.02	2.51	1.56	1.93	9.02	18.2	28.9
Excalibur II	3.01	2.33	1.61	1.97	8.91	19.8	27.4
MP 2000	2.8 0	2.51	1.54	2.05	8.9 0	19.8	25.1
Innovator +Z	3.16	2.42	1.42	1.87	8.87	19	29
ABI 9252	2.7 0	2.54	1.62	2. 00	8.86	19.8	26.1
Nitro	2.82	2.49	1.56	1.92	8.79	19.2	28.2
Idaho Gold	2.99	2.32	1.58	1.9 0	8.78	19.9	27
Rushmore	2.91	2.37	1.49	2.02	8.78	19.7	26.8
Gangbusters	2.78	2.42	1.55	2.01	8.76	19.2	26.5
Columbia 2000	2.97	2.29	1.59	1.91	8.75	18.7	28.6
ZX9352	2.7 0	2.53	1.55	1.95	8.73	19.1	27.4
Robust	3.08	2.14	1.6 0	1.85	8.67	19.3	26.1
Alfagraze	2.72	2.55	1.51	1.88	8.66	19.4	26
92-31F	2.8 0	2.39	1.59	1.89	8.66	18.8	28.1
Wild Card	2.61	2.46	1.67	1.9 0	8.64	18.8	27.2
Vernal	2.75	2.49	1.49	1.88	8.62	18.6	28.9
Goliath	2.89	2.11	1.59	1.97	8.57	20.1	26.2
Laser 152	2.83	2.2 0	1.64	1.89	8.55	19.3	27.5
Ladak	2.94	2.16	1.5 0	1.88	8.47	19.6	27.1
ZX9351	2.76	2.3 0	1.49	1.87	8.42	20.3	24.6
Lahontan	2.69	2.21	1.66	1.84	8.4 0	19.3	26.5
Orestan	2.67	2.21	1.6 0	1.79	8.26	19.4	27
Magnum IV	2.62	2.22	1.45	1.92	8.21	18.7	26.1
Stamina	2.72	2.04	1.49	1.95	8.2 0	20.4	25.3
Mean	2.91	2.4	1.57	1.93	8.81	19.5	26.9
LSD (0.10)	-	-	0.15	-	-	-	2.3
LSD (0.05)	ns	ns	ns	0.12	ns	1.1	ns

Yield at 88% dry matter.

Table 2. Disease and insect resistance levels for the 32 alfalfa varieties included in the 1996-2000 alfalfa forage evaluation trial at Malheur Experiment Station, Oregon State University, Ontario, Oregon, 1996. The information on varieties in this table was provided by participating seed companies and/or the Certified Alfalfa Seed Council.

Variety or Blend	Source	Release Year	FD	BW	FW	VW	PRR	AN	SAA	PA	SN	AP	RKN
ABI 9252	ABI America's Alfalfa	-	6	R	R	R	R	R	HR	R	R	-	R
ZX9351	ABI America's Alfalfa	-	-	-	-	-	-	-	-	-	-	-	-
ZX9352	ABI America's Alfalfa	-	-	-	-	-	-	-	-	-	-	-	-
Alfagraze	ABI America's Alfalfa	-	-	-	-	-	-	-	-	-	-	-	-
Innovator +Z	ABI America's Alfalfa	93	3	HR	HR	R	HR	HR	-	R	R	-	-
Excalibur II	Allied Seed	94	4	HR	HR	R	HR	HR	R	R	-	R	-
Columbia 2000	Allied Seed	96	2	R	R	-	MR	R	-	MR	-	-	-
Stamina	Allied Seed	96	-	HR	HR	HR	HR	HR	HR	R	HR	MR	HR
Goliath	Black Canyon Seed	93	3	HR	R	R	R	R	MR	R	-	-	-
Idaho Gold	Black Canyon Seed	93	4	R	R	MR	R	-	MR	-	-	-	-
Sterling	Cargill Hybrids	93	2	HR	HR	R	HR	HR	-	R	-	R	-
MP 2000	Cenex/Land O'Lakes	94	3	HR	HR	R	HR	HR	R	HR	-	R	-
Robust	Gooding Seed	93	5	R	HR	R	HR	R	R	R	R	-	MR
Laser 152	J-V Seeds	94	4	HR	HR	R	HR	R	MR	-	MR	MR	MR
Rushmore	Northrup King	93	4	HR	HR	R	HR	HR	HR	R	-	HR	-
Magnum III	Dairyland Seed	88	4	R	R	MR	R	MR	MR	R	MR	LR	-
Magnum IV	Dairyland Seed	92	4	HR	HR	R	HR	R	MR	-	R	MR	MR
CUF-101	Public	-	9	-	-	-	-	-	HR	HR	-	-	-
Lahontan	Public	54	6	MR	LR	-	LR	-	MR	LR	R	-	-
Nitro	Public	-	8	-	-	-	R	-	MR	-	-	-	-
Wrangler	Public	83	2	R	R	LR	HR	LR	HR	HR	-	-	-
Orestan	Public	-	-	-	-	-	-	-	-	-	-	-	-
Vernal	Public	-	2	R	MR	-	-	-	-	-	-	-	MR
Ladak	Public	-	-	-	-	-	-	-	-	-	-	-	-
Sevelra	Public	-	-	-	-	-	-	-	-	-	-	-	-
Gangbusters	Ray Brothers	94	4	HR	R	R	R	MR	-	R	R	-	-
330	Union Seed	93	4	HR	HR	R	HR	HR	R	R	-	R	-
UN 13	Union Seed	94	7	MR	HR	MR	HR	HR	HR	R	-	-	-
Wild Card	University of Idaho	-	-	-	-	-	-	-	-	-	-	-	-
92-31F	W-L Research	-	3	HR	HR	HR	HR	HR	R	R	MR	HR	-
W-L 252HQ	W-L Research	94	3	HR	HR	R	HR	HR	MR	-	R	-	-

FD=Fall Dormancy, BW=Bacterial Wilt, FW=Fusarium wilt, VW=Verticillium wilt, PRR=Phytophthora Root Rot, AN=Anthracnose, SAA=Spotted Alfalfa Aphid, PA=Pea Aphid, SN=Stem Nematode, AP=Aphanomyces, RKN=Root Knot Nematode (Northern).

Fall Dormancy: 1=Norseman, 2=Vernal, 3=Ranger, 4=Saranac, 5=DuPuits, 6=Lahontan, 7=Mesilla, 8=Moapa 69, 9=CUF 101.

Pest Resistance Rating: >50%=HR (high resistance), 31-50%=R (resistant), 15-30%=MR (moderate resistance), 6-14%=LR (low resistance).