

SECOND PRODUCTION YEAR OF THE ALFALFA FORAGE VARIETY TRIAL, 1996-2000

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Introduction

The purpose of this alfalfa variety trial is to compare the yield of 32 alfalfa varieties over a five-year life of stand, when harvested for hay with four cuttings per year. The alfalfa varieties were replicated four times in a randomized complete block experimental design. The variety trial was planted August 23, 1995. Plots were seven rows wide spaced 7 inches apart on beds 60 inches wide by 20 feet long.

Methods

In the second production year, 1997, the first cutting was May 22. A 36 inch swath was cut from the center of each plot using a flail mower. The fresh hay was weighed, and moisture content was determined by drying a sample of hay from each plot in the first three cuttings, and from ten randomly selected plots in the fourth cutting, in a forage dryer. Fresh weight of forage was converted to 88 percent dry matter (DM) for all varieties. Forage quality of each variety was analyzed by near-infrared reflectance spectrophotometer (NIRS) to estimate percentage crude protein (CP) and acid detergent fiber (ADF). Samples of 20 stems were taken from each plot at the third cutting, dried, ground to powder, and submitted for NIRS analysis. The regrowth after the first cutting was flail mowed May 29, and the field was corrugated for furrow irrigation. The first furrow irrigation was applied June 2, followed by irrigations June 12 and 17. A second cutting was taken July 14. The sprinkler system was re-installed and the field was sprinkler irrigated July 19, 20, 24, 28, and August 6. The third cutting was taken August 13, followed by sprinkler irrigations August 22 and September 5, and the fourth cutting was taken September 22. Variety differences in yield and quality of third-cutting hay were compared using ANOVA and protected least significant differences at the 5 percent level.

Results

The average yield of all the alfalfa varieties in the trial for the second year for four cuttings was 9.5 ton/acre, based on 12 percent moisture content (Table 1). Significant differences in yield were found in the first cutting at the 5 percent probability level. The absence of detectable differences in yield among the alfalfa varieties in subsequent cuttings may be attributable to excellent yield potential demonstrated by the cultivars in this trial.

Table 1. Alfalfa variety trial, second-year forage yields, and third-cutting protein and ADF, 88% dry matter, Malheur Experiment Station, Oregon State University, Ontario, OR, 1997.

Variety or blend	Source	1st	2nd	3rd	4th	1997	Crude	ADF ¹
		5/19	7/15	8/13	9/22	Total	protein	
		----- ton/acre -----				---- % ----		
MP 2000	Cenex/Land'O Lakes	3.7	3	1.7	1.9	10.4	21.94	33.59
Rushmore	Northrup King	3.7	2.8	1.8	2	10.3	22.23	34.23
Sterling	Cargill Hybrids	3.8	2.7	1.8	1.8	10.1	20.86	35.29
ZX9351	ABI America's Alfalfa	3.5	2.5	2	2	10	22.11	34.36
var 330	Union Seed	3.6	2.5	1.8	2	9.9	19.41	36.53
Tahoe	Northrup King	3.8	2.5	1.7	1.9	9.9	20.84	35.26
Gangbusters	Ray Brothers	3.8	2.5	1.6	1.9	9.9	20.37	35.47
Vernal	Public	3.5	2.7	1.7	2	9.8	20.73	36.29
Sevelra	Public	3.4	2.6	1.7	1.9	9.7	22.17	34.27
Columbia 2000	Allied Seed	3.7	2.5	1.7	1.8	9.7	20.07	36.56
Wild Card	University of Idaho	3.2	2.4	1.9	2.1	9.6	22.57	34.74
W-L 252HQ	W-L Research	3.6	2.3	1.8	1.8	9.6	21.99	34.34
UN 13	Union Seed	3.5	2.5	1.7	1.9	9.6	21.01	35.96
Laser 152	J-V Seeds	3.4	2.5	1.8	2	9.6	21.15	35.23
Magnum III	Dairyland Seed	3.5	2.2	1.8	2	9.5	22.59	32.88
Magnum IV	Dairyland Seed	3.7	2	1.9	2	9.5	21.73	34.24
Excalibur II	Allied Seed	3.3	2.5	1.8	1.9	9.5	23.76	31.58
Goliath	Black Canyon Seed	3.8	2.3	1.6	1.8	9.4	22.53	32.66
Alfagraze	ABI America's Alfalfa	3.4	2.4	1.7	1.8	9.3	21.35	34.45
var92-31F	W-L Research	3.2	2.3	1.8	1.9	9.3	21.65	34.78
Wrangler	Public	3.5	2.2	1.6	1.9	9.2	21.46	33.99
Nitro	Public	3.2	2.2	1.9	1.9	9.2	20.54	36.16
Ladak	Public	3.4	2.2	1.8	1.8	9.2	21.66	33.93
Idaho Gold	Black Canyon Seed	3.5	2.1	1.7	1.9	9.2	20.82	35.71
ZX9352	ABI America's Alfalfa	3.4	2.1	1.9	1.9	9.2	21.21	34.67
Robust	Gooding Seed	3.3	2.2	1.7	2	9.1	20.91	34.43
Orestan	Public	3.2	2.3	1.7	1.8	9.1	20.02	36.89
Lahontan	Public	3.2	2.3	1.7	1.8	9.1	19.07	36.97
Innovator+Z	ABI America's Alfalfa	3.2	2.1	1.8	1.9	9.1	21.01	34.24
ABI 9252	ABI America's Alfalfa	3.2	2.2	1.7	1.9	9.1	20.4	36.41
Stamina	Allied Seed	3.2	2.3	1.7	1.9	9	22.97	32.45
CUF-101	Public	3.1	2.2	1.6	2	8.9	21.62	33.35
Mean		3.5	2.4	1.8	1.9	9.5	21.33	34.75
LSD (0.05)		0.43	NS ²	NS	NS	NS	NS	NS
CV (%)		8.61	21.16	9.4	9.03	8.31		

¹ADF: acid detergent fiber

²NS : not significant