

## FORAGE GRASS VARIETY TRIALS

### PRELIMINARY REPORT

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#### ABSTRACT

One test each of 13 orchardgrass, eight tall fescue, and four timothy cultivars was established in August, 1987 at the Powell Butte research site of the Central Oregon Experiment Station. Seven seed companies cooperated on these tests. Orion, Napier, and Potomac were the top yielding orchard grass varieties; Latar was the least productive. Tandem and Mozark varieties of tall fescue were the leading forage producers; Fawn tall fescue was among the poorer forage producers. Clair was the top yielding variety of timothy.

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#### INTRODUCTION

In central Oregon, grass is an important component in many alfalfa fields that are used for hay. There are also many acres of different grass species and varieties used for pasture. The last grass variety trial at this station was conducted from 1968-72 in Redmond (1). Varieties of orchardgrass, timothy, brome grass, meadow foxtail, intermediate wheatgrass, tall fescue, and Kentucky bluegrass were included. Productivity was greatest for orchardgrass and decreased in order listed with Kentucky bluegrass producing the least forage. Since this trial several new varieties have been developed by public and private plant breeders which have shown improved performance in other areas of the U.S. and Canada. Therefore new grass variety trials were planted in August, 1987 at Powell Butte.

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## MATERIALS AND METHODS

Non-coated, non-treated seed was hand broadcast on August 21 and 22, 1987. The orchardgrass and tall fescue cultivars were sown at 18 lbs/A in plots six feet wide x 20 feet long. The timothy plots were only five feet wide but the same length. Timothy was planted at eight pounds per acre. Seed was raked-in and firmed with a corrugated roller. Each cultivar was replicated four times in a randomized complete block design. Table 1 shows the variety name and source of each entry.

Soil test values from a sample taken June 1, 1987 were pH 6.5, 13 ppm P, 281 ppm K, and 6.2 ppm nitrate N in the 0-12 inch depth. A broadcast application of 16-20-0-15(s) at 410 pounds per acre was incorporated into the seedbed on August 17, 1987. Another application of 16-20-0-15(s) at 500 pounds per acre was top-dressed on all plots April 4, 1988.

The trials were sprinkler irrigated as needed throughout the growing season.

The first cutting was harvested June 20, 1988. Plot size harvested was 3.3 feet wide by 14 feet long. A sample of approximately one pound was taken from each plot, placed in a forage dryer, and dried to determine percent dry matter. All harvested green weights were then converted to tons per acre of dry matter. The second cutting was taken August 9, 1988, except for the Timothy trial, which was harvested August 8, 1988.

## RESULTS

ORCHARDGRASS. The height, maturity, and yields of 13 orchardgrass varieties grown at Powell Butte in 1988 are shown in Table 2. Growers have utilized Latar for many years, but it was the lowest yielding variety in this trial. Orion, Napier, and Potomac were the three highest yielding varieties.

There was a wide range in maturity among the varieties. Napier, Potomac, Sterling, and Ambassador were among the earlier maturing varieties, while Orion, Syn 8 SM, Rancho, Phyllox, and Latar were among the later maturing varieties.

TALL FESCUE. The first year production data for eight tall fescue varieties is shown in Table 3. The check variety Fawn was among the lowest yielding varieties; Tandem and Mozark produced nearly 1 1/2 tons per acre more forage than Fawn. Mozark was the earliest maturing variety, Fawn the latest.

TIMOTHY. The height, maturity and yield of four timothy varieties grown at Powell Butte in 1988 are shown in Table 4. Clair was the earliest maturing variety and also the top yielding variety. By contrast, Climax was the latest maturing variety and the least productive.

#### REFERENCE

1. Murphy, W.M. and M.J. Johnson. 1976. Grass Varieties for Central Oregon. Oregon Agricultural Experiment Station Special Report 468. 8pp.

Table 1. Forage grass varieties and sources of each in Powell Butte, Oregon, tests, 1987

Type of Grass	Variety	Source*
<u>ORCHARDGRASS</u>	Rancho	Cenex/Land O'Lakes
	Phyllox	Daehnfeltd, Inc.
	Ambassador	International Seeds, Inc.
	Comet	Northrup King Co.
	Orion	Northrup King Co.
	Syn 8SM	Turf Seed, Inc.
	Syn 885	Turf Seed, Inc.
	Syn 887	Turf Seed, Inc.
	Napier	Willamette Seed & Grain
	Paiute	USDA
	Latar	CHECK
	Potomac	CHECK
	Sterling	CHECK
<u>TALL FESCUE</u>	Forager	Cenex/Land O'Lakes
	Syn W	Cenex/Land O'Lakes
	Mozark	International Seeds, Inc.
	Martin	International Seeds, Inc.
	FA-293-86	Turf Seed, Inc.
	Tandem	Turf Seed, Inc.
	Johnstone	Willamette Seed & Grain
	Fawn	CHECK
	<u>TIMOTHY</u>	Timfor
Mor-Tim		Cargill
Climax		CHECK
Clair		CHECK

\* Source: Entering or originating agency; CHECK varieties were supplied by Gooding Seed Co., Northrup King Co., and Round Butte Seed Growers.

Table 2. Height, maturity, and yield of 13 orchardgrass varieties grown at the Powell Butte site of the Central Oregon Experiment Station, 1988

Variety	Height <sup>1</sup> in	Maturity <sup>2</sup> score	Yield <sup>3</sup>		
			1st Cut	2nd cut	Total
			-----tons/acre-----		
Orion	33.3	1.3	3.27	2.23	5.50
Syn 8 SM	29.0	1.0	2.97	2.12	5.09
Napier	28.0	5.3	2.94	2.51	5.45
Potomac	27.8	6.0	2.90	2.41	5.31
Syn 887	27.0	2.3	2.83	2.14	4.97
Sterling	27.8	5.3	2.81	2.30	5.11
Rancho	25.3	1.8	2.76	2.15	4.91
885	26.5	3.3	2.68	2.29	4.97
Paiute	28.5	4.8	2.68	2.17	4.85
Comet	27.3	3.8	2.51	2.28	4.79
Ambassador	27.3	5.8	2.47	2.15	4.62
Phyllox	27.0	1.8	2.45	2.38	4.83
Latar	24.5	2.0	2.21	2.08	4.29
Average	27.6	3.4	2.73	2.25	4.98
LSD (5%)	3.5	2.0	0.45	0.30	----
CV (%)	8.8	42.0	11.37	9.35	----

1 Ht. = height taken June 16, 1988.

2 Maturity Score: 1 = panicles starting to emerge, 5 = 50% of panicles shedding pollen, 10 = 100% of panicles shedding pollen. Taken June 16, 1988.

3 Yield is on a dry matter basis determined from an oven-dried sample from each plot. Plots cut June 20, 1988, and August 8, 1988.

Table 3. Height, maturity, and yield of eight tall fescue varieties grown at the Powell Butte site of the Central Oregon Experiment Station, 1988

Variety	Height <sup>1</sup> (in)	Panicle <sup>2</sup> score	Yield <sup>3</sup>		
			1st Cut	2nd Cut	Total
			-----tons/acre-----		
Tandem	33.0	3.5	4.27	2.48	6.75
Mozark	34.5	10.0	4.24	2.73	6.97
Syn W	25.8	5.0	3.58	2.44	6.02
Johnstone	23.8	6.5	3.42	2.22	5.64
FA 293	25.0	7.5	3.32	2.39	5.71
Forager	24.3	2.3	2.92	2.34	5.26
Fawn	22.5	1.0	2.89	2.45	5.34
Martin	23.3	2.3	2.72	2.63	5.35
Average	26.5	4.8	3.42	2.46	5.88
LSD (5%)	2.8	2.0	0.67	0.54	----
CV (%)	7.3	29.1	13.27	14.82	----

1 Ht. = height to end of tallest leaf taken June 16, 1988.

2 Panicle density score: 1 = least number of panicles and 10 = most dense.

3 Yield is on a dry matter basis determined from an oven-dried sample from each plot. Plots cut June 20, 1988, and August 8, 1988.

Table 4. Height, maturity, and yield of four timothy varieties grown at the Powell Butte site of the Central Oregon Experiment Station, 1988

Variety	Height <sup>1</sup> in	Maturity <sup>2</sup> score	Yield <sup>3</sup>		
			1st Cut	2nd Cut	Total
			-----tons/acre-----		
Clair	32.0	10.0	4.00	2.28	6.28
Timfor	26.5	2.6	3.85	2.12	5.97
Mor-Tim	27.3	3.5	3.82	2.04	5.86
Climax	25.5	1.8	3.52	1.82	5.34
Average	27.8	4.5	3.80	2.07	5.86
LSD (5%)	2.7	0.8	0.45	0.32	----
CV (%)	6.0	11.2	7.44	9.77	----

1 Ht. = height taken June 16, 1988.

2 Maturity Score: 1 = mid-boot stage, 3 = late boot stage, 5 = 50% headed, 10 = 100% headed.

3 Yield is on a dry matter basis determined from an oven-dried sample from each plot. Plots cut June 20, 1988, and August 8, 1988.