

Alfalfa Variety Trial in Greenlee County, 1988

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ABSTRACT

For the past three years, ten alfalfa varieties have been grown and yields recorded. Yields in excess of 9 tons per acre were harvested in 1988 on 7 of the 10 varieties. Baron, a moderately nondormant variety, was the highest yielding variety for the three years, with an average yield of 8.9 tons per acre.

INTRODUCTION

Alfalfa is the third most important crop in Greenlee county, following cotton and wheat. It is grown as a cash crop by some farmers and as an integral part of the dairy operation. The Midwestern and Southwestern drought limited amounts of hay and forage available; hay prices have risen well above the \$100 per ton mark. This, too, increased the interest in alfalfa in the county.

MATERIALS AND METHODS

In 1985, ten alfalfa varieties were planted in Greenlee county to find the varieties would produce the most hay per acre. Selections were made from cultivars varying from very nondormant to moderately nondormant. Varieties commonly in use in the county at the time were generally in the moderately nondormant to nondormant class. These plots have been maintained for three years; hand-cuttings were taken with each harvest.

Crop History

Location: Larry Barney farm, north of Duncan
Elevation: 3500 feet above sea level
Soil type: Pima silty clay loam
Planted: 11 September 1985, 25 pounds per acre
Plot size: 3 feet by 20 feet
Replications: Four

Plots were cut using a Jari hand mower and weighed immediately to avoid moisture loss. The weights were converted to dry weight at 12% moisture.

RESULTS AND DISCUSSION

Table 1. Third year summary of alfalfa variety yields on the Larry Barney farm in Greenlee county.

VARIETY	CUT 1 17 May	CUT 2 17 Jun	CUT 3 13 Jul	CUT 4 15 Aug	CUT 5 26 Sep	CUT 6 2 Nov	TOTAL 1988	% OF BARON
LEW	1.92 (9)#	1.82 (5)	1.40 (4)	1.25 (1)	1.16 (1)	1.19 (1)	9.36 A*	103.8
PIONEER 5929	1.97 (6)	1.84 (4)	1.42 (2)	1.23 (2)	1.01 (5)	1.12 (4)	9.22 A	102.2
ARDIENTE	2.09 (4)	1.97 (2)	1.32 (8)	1.07 (9)	1.10 (2)	0.97 (6)	9.14 A	101.4
HYPHY	2.22 (3)	2.10 (1)	1.38 (6)	1.13 (8)	0.94 (10)	0.69 (10)	9.11 A	101.0
CUF 101	1.94 (8)	1.86 (3)	1.39 (5)	1.18 (6)	0.97 (8)	1.14 (3)	9.08 A	100.7
VALIANT	1.96 (7)	1.76 (9)	1.35 (7)	1.19 (5)	1.01 (6)	1.15 (2)	9.03 A	100.1
BARON	2.24 (2)	1.76 (10)	1.46 (1)	1.16 (7)	0.95 (9)	0.84 (8)	9.02 A	100.0
PIERCE	2.01 (5)	1.77 (8)	1.41 (8)	1.22 (3)	0.99 (7)	0.93 (7)	8.95 A	99.3
RINCON	2.36 (1)	1.76 (8)	1.26 (10)	1.02 (10)	1.02 (4)	0.83 (9)	8.86 A	98.3
PALMER SPECIAL	1.78 (10)	1.81 (6)	1.27 (9)	1.19 (4)	1.03 (7)	1.09 (5)	8.75 A	97.0
GRAND MEAN	2.05	1.85	1.37	1.16	1.02	1.00	9.05	
% CV	8.1	5.6	4.5	5.8	6.4	16.0	1.8	
LSD (05)	0.30	0.40	0.14	0.18	0.12	0.16	0.73	

* Values followed by the same letter are not significantly different at the 5% level using the Student-Newman-Keul's test.

Yields are in tons per acre corrected to 12% moisture, ranks are in parentheses.

Yields were excellent in 1988. The season was longer than normal, allowing a good cutting in November. Lew was the highest-yielding variety this year; the reason for this result is not known, but it could have been due to resistance to stem nematode or to the fact that Lew is a very nondormant cultivar. Neither Pioneer 5929 nor Ardiente, the second and third highest yielding varieties, are known to have stem nematode resistance, so it is assumed that this is not a factor. Hy-phy, a moderately dormant variety, came in fourth, even though it was the lowest yielding variety in both the 5th and 6th cuttings. Table 2 gives a three-year summary of yields.

Table 2. Three-year summary of alfalfa variety yields on the Larry Barney farm in Greenlee county, 1986-1988.

VARIETY	1986	1987	1988	Average over years	% of Baron
BARON	7.09 (1)#	10.59 (3)	9.02 (7)	8.90 A*	100.0
CUF 101	6.52 (5)	10.69 (2)	9.08 (5)	8.76 AB	98.5
VALIANT	6.44 (6)	10.75 (1)	9.03 (6)	8.74 AB	98.2
PIONEER 5929	6.68 (3)	10.23 (6)	9.22 (2)	8.71 AB	97.9
PIERCE	6.64 (4)	10.33 (5)	8.95 (8)	8.64 AB	97.1
HYPHY	7.08 (2)	9.30 (9)	9.11 (4)	8.50 B	95.5
LEW	6.64 (4)	9.48 (8)	9.36 (1)	8.49 B	95.4
ARDIENTE	6.18 (7)	10.01 (7)	9.14 (3)	8.44 B	94.9
PALMER SPECIAL	5.99 (8)	10.50 (4)	8.75 (10)	8.41 B	94.5
RINCON	5.42 (9)	8.69 (10)	8.86 (9)	7.66 C	86.0
GRAND MEAN	6.40	10.00	9.05	8.48	
% CV	7.5	6.5	1.8	3.8	
LSD (05)	0.13	0.10	0.73	0.24	

* Values followed by the same letter are not significantly different at the 5% level using the Student-Newman-Keul's test.

Yields are in tons per acre corrected to 12% moisture, ranks are in parentheses.

Even with its dismal showing in 1988, Baron still has the highest overall average yield. Yields are currently being taken in 1989; the stands look good enough to continue this research another year.

REFERENCES

DeRosa, E. and L. Clark. 1988. Alfalfa variety trial in Greenlee county, 1987. Forage and Grain, A College of Agriculture Report, University of Arizona, Tucson, AZ. Series P-74, pp. 39-41.