Alfalfa Cultivar Evaluation With and Without Supplemental Irrigation

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Summary

Seventeen cultivars and experimental lines of non-dormant or semi-dormant alfalfas were planted at TAES-Beeville in mid-November 1983. Two sets of plots containing four replications each were seeded at 20 lb/A. Phosphorus fertilizer was applied in September 1983, December 1984, and June 1985. One set of plots has only received natural rainfall, where the other set has received about one inch of supplemental irrigation per week during the growing season. In 1984, three and eight harvests were taken from the non-irrigated and irrigated plots, respectively, with total season yields averaging 1.9 and 6.2 tons/A. In 1985, four and eight harvests yielded 3.8 and 7.9 tons/A. Harvests were made on the irrigated plots when most cultivars were in early bloom, which was about every 5 weeks. The non-irrigated plots were cut when there was sufficient forage to make it potentially economical to harvest. This varied from 5 weeks to several months between harvests. The non-irrigated alfalfa was often a poor quality product because of the infrequent harvests. The increased yields in 1985 are due to more natural rainfall and a better system of applying the supplemental irrigation water. Little variation has been observed among cultivars for total yield (See Table 1). All cultivars are susceptible to cotton root rot, and about 30 percent of the irrigated plots have been lost to cotton root rot. The presence of cotton root rot in South Texas is going to be a major factor in limiting the widespread use of this legume.

TABLE 1. TOTAL SEASONAL DRY MATTER YIELDS OF ALFALFA CULTIVARS PLANTED AT TAES-BEEVILLE NOVEMBER 12 AND 14, 1983

Cultivar or Exp. Line	Irrigated		Non-irrigated	
	1984	1985	1984	1985
	Tons/Acre[1]			
Baron	6.5	8.1	2.0	3.7
Pierce	6.5	7.9	1.9	3.7
WL 515	6.3	7.5	2.0	4.0
Pioneer 555	6.3	8.2	2.0	4.2
XAN 21 (Pioneer)	6.3	8.2	1.9	3.4
Florida 77	6.6	8.5	1.9	4.4
Southern Special	6.1	8.5	1.9	4.4
Raidor	5.6	7.3	1.7	4.0
Hi-Phy	6.1	7.6	1.9	3.8
Cimmaron	6.1	8.2	1.9	4.2
WL 318	6.3	7.8	1.8	4.0
UC Cibola	6.2	8.1	1.9	3.7
Moapa 69	6.0	8.9	1.8	3.8
CUF 101	6.4	8.0	1.7	3.7
Granada	6.2	7.6	2.0	3.6
NAPB 29	6.4	7.2	2.0	3.5
GT 13R Plus (Ferry-Morse)	6.2	7.6	1.8	3.6
Average	6.2	7.9	1.9	3.8

[1]Tons/Acre is on a 100 percent dry matter basis. Irrigated yields included eight cuttings in each year; non-irrigated yields included three cuttings in 1984, four cuttings in 1985.

KEYWORDS: Alfalfa/supplemental irrigation.

Alfalfa Variety and Fertility Trials on Brazos Riverbottom Soil

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Summary

Only small yield differences between alfalfa varieties occurred in 1985, the second year of production. Forage yields from six harvests ranged from 11,300 to 13,300 lb DM/A. Armor, Florida 77, Weevlchek, and Cimarron were the top yielding varieties. Percent stands were down for all varieties from April 85 to April 86. Florida 77, Baron, Southern Special, and Siriver stands exceeded 75 percent. Stands of Vancor, Hi-phy, Classic, Raidor, and Saranac AR had decreased to less than 50 percent by spring 1986. After 2 years there was still no response to fertilizer.

Introduction

Alluvial soils along the Brazos River from Waco, and the Colorado River from Austin, to near the Gulf of Mexico amount to 800,000 acres. Most of these soils are planted to row crops because of their natural high fertility. However, monoculture cropping systems cause an increase in disease, insect, nematode, and weed problems which result in increased production costs and/or lower yields. Alfalfa would fit well into a row crop rotation by reducing pest problems and improving soil structure and fertility. High quality alfalfa hay brings a premium from dairies and horse owners. Present alfalfa acreage on these alluvial soils is estimated between 5,000 and 10,000 acres.

Alfalfa variety and fertilizer studies were planted in fall 1983 in the Brazos riverbottom 10 miles north of Angleton. Objectives of the studies were to identify the most productive varieties and fertility rates for optimum production on well drained riverbottom soils in Southeast Texas. Yields for the second growing season (1985) are reported.

Procedure

The studies were seeded at 20 lb/A on October 11, 1983 on a Norwood silt loam. Experimental design was a randomized block with four replications. Florida 77 was used for the fertility study. On April 18, 1985 the variety test was fertilized with 60 lb/A of phosphorus and potassium and the fertility treatments were applied to the

KEYWORDS: Alfalfa/fertility/spring recovery.