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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

¹Tons/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.