

Alfalfa Hay Yields For Two Years of Eight Varieties Planted in February 1995 on the Colorado River Indian Tribes Reservation

Michael D. Rethwisch and Hipkoe Sakiestewa

Abstract

Eight alfalfa varieties were evaluated for forage production during 1995 and 1996 following a Feb. 1995 planting. DK 189 yielded the most tonnage in both years of production (104.4% of CUF 101) and Mecca II the least amount (95.9% of CUF 101). Although five varieties had higher yields than CUF 101 during the second year of production, only DK 189 and WL 525 HQ averaged higher yields than CUF 101 for the two year duration of this study.

Introduction

A number of alfalfa varieties have become available for use in the low desert alfalfa production areas in Arizona in the past several years. Each of the varieties are promoted by the company, but few comparisons under local conditions exist. This trial was designed to compare the yields of several alfalfa varieties that had not previously been tested in Arizona using grower conditions and management.

Methods and Materials

Eight alfalfa varieties were planted February 11, 1995, at a rate of 33 lbs/acre. Initial germination irrigation was made on Feb. 12-13. Varieties planted were DeKalb 189, WL 612, WL 525-HQ, Mecca II, Mesa, CW 2995, Prestige, and CUF 101 which served as the variety to which all others were compared.

Plots were 27 ft wide by length of field (length varied as field angled, ranged from 876 to 535 feet). All varieties were replicated four times in a randomized complete block design. Soil type for the three longest replicates consisted of a Holtville-Kofa complex and Vint sandy loam, however the other replicate (with shortest lengths) was planted on soil that was primarily Lagunita loamy sand.

Plots were cut five times during 1995. Fields were custom cut and harvested. Since personnel operating the swather for cutting of alfalfa changed frequently and were not always instructed as to plot layout, each plot was not perfectly cut each time, and some windrows may have had some overlap (usually less than 10%). For this reason, alfalfa weights were not taken from each plot, nor were partial bales obtained per plot. An average weight of 135 lbs./bale was used throughout the study to calculate yields.

Plots were baled and bale counts obtained from the 2nd, 3rd and 4th harvests in 1995 (July 2 and 29, and August 29). Number of hay bales were obtained for each plot for all cuttings except for the first harvest (June) and the last harvest (October-November). The June cutting was not included due to the weediness in the plots (partially as a result of a February planting and subsequent winter/spring rains) which was expected to alter hay yield data. The last harvest (October-November) was not recorded as personnel were unavailable.

Data were collected from all plots. Data from the replicate with sandy soil was not included in mean yield calculations due to severe reduction (300-500 lbs/acre on some cuttings) in yields caused by moisture stress. Three plots from one replicate (WL 612, Mesa, and CW 2995) were also not included for yield calculations due to grassy weed overtaking alfalfa stand and severely limiting alfalfa production.

During the winter of 1995-1996 one entire replicate (sandy area) and several plots and partial plots were replanted with CUF 101, which resulted in mixed numbers of plots available for 1996 data. Most varieties had 2-3 replicates with the exception of CW 2995 which had only one replicate.

Eight cuttings were completed in 1996. Data (bale counts) were collected for all but the April harvest as custom crews picked up bales before counts were obtained. Data from several plots which were partially reseeded were corrected (variety vs. new seeding area) so that varietal production from each plot could be calculated. Due to variables associated with this study (custom harvesting and plots not always precisely cut, using equal bale weights for each variety, differing numbers of replications), exact yields may vary somewhat from those calculated.

The field was disced in early October 1996, ending the field portion of this experiment.

Results

DK 189 was the highest yielding (tonnage) variety in both years, and Mecca II was lowest yielding of all varieties both years (Table 1), with an average difference slightly less than 200 lbs./cutting. CUF 101 was the third highest yielding variety in 1995 but five of the other seven varieties had higher yields in 1996 (Table 2) than CUF 101, ranging from 0.5-7.3% increases.

During the two years of this study only DK 189 (104.4%) and WL 525 HQ (101.9%) averaged more yield per cutting than CUF 101. More field trials will be necessary to determine if the results noted after two years of production would be similar to those obtained at the end of three years of production, the amount of time most fields are in production in this area.

Table 1. Average alfalfa hay yields (tons/acre) in 1995 and 1996 from eight alfalfa varieties planted February 1995 on the Colorado River Indian Tribes Reservation.

Variety (fall dormancy rating)	Average yield/cutting and rank (in parentheses)			Percent of CUF 101
	1995	1996	1995-1996	
DK 189 (8)	1.098 (1)	1.194 (1)	1.146	104.4
WL 525 HQ (8)	1.058 (5)	1.178 (2)	1.118	101.9
CUF 101 (9)	1.083 (3)	1.112 (6)	1.098	100.0
WL 612 (9)	1.060 (4)	1.118 (5)	1.089	99.2
Mesa (8)	1.089 (2)	1.075 (7)	1.082	98.6
CW 2995	1.034 (6)	1.125 (3)	1.080	98.4
Prestige (8)	1.029 (7)	1.123 (4)	1.076	98.0
Mecca II (9)	1.029 (8)	1.074 (8)	1.052	95.9

Yields based on average bale weight of 135 lbs./bale.

Table 2. Mean hay yields (tons/acre) from 1996 season of eight alfalfa varieties planted February 1995.

Variety	Cutting Date											Total	Percent Yield of CUF 101
	March 2	Apr. 1	May 1	May 28	June 27	July 26	Aug 22	Sept. 26					
DK 189	1.241		1.280	1.017	1.667	1.103	0.994	1.148				8.359	107.3
WL 525 HQ	1.252	Yield data	1.217	1.158	1.590	0.859	1.020	1.151				8.245	105.9
CW 2995	1.265		1.265	1.157	1.265	1.107	0.791	1.028				7.875	101.1
Prestige	1.145	were	1.130	1.140	1.486	0.937	0.994	1.028				7.859	100.9
WL 612	1.241	not	1.171	1.090	1.482	0.779	1.090	0.975				7.827	100.5
CUF 101	1.078	ob- tained	1.289	0.998	1.504	0.884	1.009	1.027				7.787	100.0
Mesa	1.048		1.211	1.059	1.364	0.988	0.906	0.947				7.522	96.6
Mecca II	1.107		1.143	1.189	1.399	0.805	0.884	0.994				7.519	96.6

Yields based on average bale weight of 135 lbs/bale.