

# **New Alfalfa Variety Trial in Graham County Arizona, 1999**

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## ***Abstract***

*Twenty six alfalfa varieties with fall dormancy ratings of 8 or 9 were tested in a replicated small plot trial on a sandy clay loam soil on the Safford Agricultural Center. This was the first year of the study. Mecca III was the highest yielding variety in 1999 with Coronado following closely behind. Both varieties produced a yield close to 9.5 tons per acre.*

## **Introduction**

This is the first year of a new study which includes the best varieties from the previous trial along with several new varieties that seem promising. Because the yield relations by variety were quite different on the heavy soil currently underway at the Agricultural Center compared with previous studies done, this study was started on lighter soil and will be reported on concurrently with the other study. This is the 24th year of continuous alfalfa variety testing in Graham county.

## **Materials and Methods**

Twenty six alfalfa varieties with fall dormancy ratings ranging from 8 to 10 are included in this test. Plots were planted using a John Deere Van Brunt 6-foot grain drill with a small seed attachment. Eight lines were planted down two 36-inch beds, with 6-inch spacings between lines. A ring roller was run over the plots before planting to firm the beds and afterwards to help incorporate the seed.

### ***Crop History:***

Location: Safford Agricultural Center, Graham County

Elevation: 2950 feet above sea level

Soil type: Grabe clay loam

Planting date: 2 October 1998                      Rate: 25 lbs/acre

Herbicide: None

Fertilizer: 300 lbs/ac 16-20-0 at planting

Insecticide: Treatment to control alfalfa weevil

Irrigation: Border- 17 irrigations (ca. 109 acre inches)

Harvest strategy: Cut around 10% bloom to optimize quantity and stand longevity.

Plot size: 4 feet by 15 feet

Replicates: Four

Plots were cut, raked and weighed immediately to prevent loss of moisture. Weights were converted to dry weight at 0% moisture for reporting purposes.

**Table 1. First year yield summary for 26 alfalfa varieties grown at 2950 feet above sea level grown in a Grabe clay loam soil in southeastern Arizona. Yields are in tons per acre corrected to 0% moisture, ranks are in parentheses. (Graham county, Safford Agricultural Center. 32° 49' S. Latitude)**

Variety	Cut 1 5/7	Cut 2 6/4	Cut 3 7/12	Cut 4 8/11	Cut 5 10/12	Cut 6 11/22	Total 1999	% of Cuf 101
Mecca III	2.02 (2)	1.34 (2)	2.19 (3)	1.98 (1)	1.26 (5)	0.88 (15)	9.55 a	118.2
Coronado	1.62 (18)	1.37 (1)	2.28 (2)	1.80 (2)	1.28 (1)	1.16 (4)	9.49 ab	117.5
DeKalb 191	1.85 (6)	1.34 (4)	2.14 (4)	1.73 (3)	1.08 (15)	1.15 (5)	9.29 abc	115.0
SW 7400	2.02 (2)	1.34 (3)	2.05 (7)	1.64 (8)	1.13 (11)	0.94 (12)	9.10 a-d	112.6
ZX 9393	1.89 (4)	1.23 (7)	2.22 (2)	1.64 (7)	1.01 (22)	1.10 (6)	9.09 a-d	112.5
UN9L600	1.68 (15)	1.24 (5)	2.06 (6)	1.53 (13)	1.24 (6)	1.24 (1)	8.98 a-d	111.1
SW 8210	2.07 (1)	1.18 (10)	1.87 (20)	1.48 (18)	1.20 (7)	1.05 (7)	8.84 a-e	109.4
Maricopa	1.82 (7)	1.20 (9)	1.93 (14)	1.68 (6)	1.26 (4)	0.80 (17)	8.69 a-e	107.6
Mesa	1.81 (8)	1.18 (11)	1.85 (18)	1.71 (4)	1.20 (8)	0.87 (16)	8.61 a-e	106.6
ZX 9701	1.86 (5)	1.16 (12)	1.99 (10)	1.48 (17)	1.08 (16)	1.01 (9)	8.58 a-e	106.2
ABI 9283	1.76 (11)	1.24 (6)	2.10 (5)	1.47 (19)	1.03 (20)	0.94 (11)	8.54 a-e	105.7
UN 1718	1.75 (12)	1.14 (13)	2.00 (9)	1.54 (11)	1.17 (10)	0.92 (14)	8.52 a-e	105.4
ZS 9890	1.68 (13)	1.21 (8)	1.91 (5)	1.68 (5)	0.86 (25)	1.18 (3)	8.52 a-e	105.4
WL 525HQ	1.80 (10)	1.08 (20)	1.70 (24)	1.53 (15)	1.26 (3)	0.93 (13)	8.29 a-e	102.6
Mecca	1.72 (14)	1.07 (21)	1.82 (20)	1.43 (22)	1.27 (2)	0.97 (10)	8.28 a-e	102.5
Barbara	1.81 (9)	1.14 (14)	2.00 (8)	1.53 (14)	1.06 (19)	0.66 (24)	8.19 a-f	101.4
Mecca II	1.65 (17)	1.08 (19)	1.80 (21)	1.55 (10)	1.06 (18)	1.05 (8)	8.18 a-f	101.2
<b>Cuf 101</b>	<b>1.55 (22)</b>	<b>1.11 (16)</b>	<b>1.73 (22)</b>	<b>1.39 (23)</b>	<b>1.09 (14)</b>	<b>1.22 (2)</b>	<b>8.08 a-f</b>	<b>100.0</b>
ZG 9797	1.70 (14)	1.13 (15)	1.96 (13)	1.47 (20)	1.02 (21)	0.75 (22)	8.04 b-f	99.5
Yolo	1.59 (19)	1.08 (18)	1.89 (16)	1.53 (12)	1.13 (12)	0.79 (19)	8.01 b-f	99.1
Achiever	1.52 (23)	1.02 (24)	1.97 (11)	1.59 (9)	1.18 (9)	0.71 (23)	7.98 c-f	98.8
WestStar	1.59 (20)	1.07 (22)	1.97 (12)	1.05 (16)	1.00 (23)	0.79 (18)	7.92 c-f	98.0
Alto	1.58 (21)	1.04 (23)	1.71 (23)	1.44 (21)	1.12 (13)	0.75 (21)	7.63 d-g	94.4
ZL 9889A	1.43 (12)	1.10 (17)	1.84 (19)	1.38 (24)	0.96 (24)	0.78 (20)	7.48 efg	92.6
UN9T1078	1.46 (3)	0.84 (25)	1.69 (25)	1.11 (26)	1.07 (17)	0.59 (25)	6.76 fg	83.7
DK 180	1.35 (26)	0.79 (26)	1.64 (26)	1.13 (25)	0.86 (26)	0.53 (26)	6.28 g	77.7
Average	1.71	1.14	1.93	1.53	1.11	0.91	8.34	--
LSD(05)	0.45	0.29	0.48	0.29	0.21	0.27	1.50	--
CV(%)	18.7	18.2	17.8	13.5	13.5	20.7	12.7	--
HU 77/41°F	1823	734	1246	991	1896	825	7515	

1. Values followed by the same letter are not significantly different at the 5% level of probability using the Duncan Multiple Range test.