ALFALFA VARIETY DEMONSTRATION

Joe Janak, Cooperator, (2007-2008)
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SUMMARY:

In an evaluation of 18 varieties of alfalfa planted November 23, 2007 and randomly replicated three times, nine varieties grew faster and better than the remaining as seedlings as evaluated in December 2007.

After a drier than normal year and four harvests/cuttings, alfalfa yields decreased as the drought extended into the season. Average yields across all varieties decreased by over half by the third harvest from 1555 down to 664 pounds per acre with a slight increase for the fourth cutting.

A composite of all harvests shows two varieties are higher than the rest, namely, Magna 995 and WL 711, although they are not statistically different from any of the top 14 varieties.

OBJECTIVE:

To determine the best all-around alfalfa variety to plant for the Victoria County area.

MATERIALS and METHODS:

Eighteen of the best alfalfa varieties donated by alfalfa seed companies were gathered and planted with a John Deere Grain Drill on conventional disc-tilled DaCosta Contee complex soil that is typical of a dark, heavy clay type soil. Planting took place on November 23, 2007 planting 1/4 - 1/2 inch deep at the rate of 17.7 lbs/acre. Seed was covered by dragging a heavy chain behind the grain drill. Plots were 8' x 200' each or just under one-half tenth of an acre and were replicated three times in a randomized complete block design.

Moisture was minimal at planting but ¾ inch rain followed the next day allowing sufficient moisture for germination. Fertilizer knifed in on 12 inch centers prior to planting was 223 lbs/acre of 11-37-0 per acre or 24-82-0 which was slightly above soil tests recommendations for phosphorus. No potassium was recommended. All seed was either seed-company treated with the proper inoculant or hand treated prior to planting with alfalfa Nitragin inoculant. Some varieties were treated with a fungicide by the company.

The field was pre-treated with 1.3 pt/ac glyphosate herbicide on October 6, 2007, 47 days prior to planting. A follow-up treatment of 18.7 oz/ac glyphosate occurred three days after planting on November 26, 2007 to minimize any late season weeds. Request and DynaPack was added along with the herbicide sprays to insure higher weed control.

No herbicides were use in the 2008 season. Harvest took place four times in 2008 including: April 5, May 13, July 19 and September 8. Hand harvest of 22.5 square feet per plot (0.0005 acre) took place on the April 5th. The remaining harvests were made with a conventional cutter/conditioner machine of the entire field. All plots were allowed to air dry adequately to bale and the following dimensions were baled, collected and weighed in each plot for all three replications: 8' x 120' (0.022 acre) on May 13th and July 19th and 8' x 96' (0.018 acre) on September 8th. Small square bales were made on the last three harvests and from the last two harvests there were 4 – 5 core samples taken from each bale/plot for protein analysis.

RESULTS and DISCUSSIONS:

Conditions were quite dry after the initial planting date rain of 3/4 inch and no rain fell until late December. Growth was minimal due to dry conditions and growth remained less than 2 - 3 inches tall. Differences were visually seen in December, 2007 within varieties as noted in Table 1.

Conditions remained slightly drier than normal for a typical spring although growth was near adequate. The initial harvest may have been delayed two - three weeks compared to typical year's harvests due to minimal rainfall. After the first harvest, soil moisture was again marginal but adequate for a second cutting. Rainfall decreased considerably after the second and third cutting extending to a major drought from summer on through the rest of the year. Therefore, harvest yields decreased as the season progressed and nearly no growth resulted after the fourth harvest on through winter.

Due to little or no rain after the second harvest, the third and fourth harvests were made prematurely to capture the leaf growth or all would have been lost due to leaves drying up and defoliating from the plant. As a result, the protein analysis was quite high for the second and third harvests ranging from 23.2 - 25.9 percent; typically in the 17 – 22 percent range. Conversely, yields in the latter two harvests were low ranging from only 493 – 1117 lbs/acre. See Table 2 for complete results.

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DISCLAIMER CLAUSE:

Trade names of commercial products used in this report are included only for better understanding and clarity. Reference to commercial products or trade names is

made with the understanding that no discrimination is intended and no endorsement by the Texas A&M University System is implied. Readers should realize that results from one experiment do not represent conclusive evidence that the same response would occur where conditions vary.

Table 1. Alfalfa height in inches 50 days after initial planting. Joe Janak, Cooperator, Victoria County TX, 2007-2008.

Variety	Height in		Variety	Height in
WL530 HQ	3		WL530 HQ	2
Yosemite	2		Sequoia	2
WL652 HQ	2		Magna 995	2
WL535 HQ	1.5		Magna 901	2
13R Supreme	1.5		HybridForce 800	1.5
WL 711	1		Cibola	3
SW 9710	1.5		Ameristand	3
SW 9628	3.5		Ameristand 802	3
SW 8718	3.5		Ameristand	3
SW 10	3.5		WL530 HQ	3

Table 2. Harvest yield and quality data from 18 alfalfa varieties. Joe Janak, Cooperator, Victoria County TX, 2007 – 2008.

Harvest Date		4/5/2008				5/13/2008	7/19/2008		9/8/2008		2008
Rating Data Type Rating Unit		YIELD LBS/AC	HEIGHT INCHES	PLANT STAND DENSITY	BLOOM PERCENT	YIELD LBS/AC	YIELD LBS/AC	PROTEIN PERCENT	YIELD LBS/AC	PROTEIN PERCENT	TOTAL YIELD LBS/AC
Ranking	ALFALFA VARIETY										
1	Magna 995	1762 a	13.7 ab	2.7 a	11.7 a	1379 ab	668 a-f	23.6 efg	969 abc	24.1 a	4778 a
2	WL 711	1593 a	14 a	2.3 a	12.3 a	1247 a-d	816 ab	23.5 fg	1117 a	23.9 a	4774 a
3	WL535HQ	1786 a	13 bcd	3 a	11.7 a	1388 a	708 a-d	24.0 c-g	809 bc	25.4 a	4690 ab
4	13R Supreme	1641 a	13.7 ab	3 a	11.7 a	1359 abc	706 a-d	25.3 a	880 abc	25.4 a	4587 abc
5	Sequoia	1472 a	13 bcd	3 a	8.3 ab	1318 a-d	842 a	23.2 g	914 abc	24.5 a	4547 a-d
6	SW 8718	1666 a	13 bcd	3 a	6.7 ab	1177 cde	778 abc	24.7 a-e	912 abc	25.7 a	4533 a-d
7	WL530HQ	1400 a	13.7 ab	3 a	7.3 ab	1277 a-d	746 abc	23.3 g	1088 ab	24.4 a	4510 a-d
8	SW 10	1593 a	13.3 abc	3 a	8.3 ab	1198 b-e	641 b-f	24.5 a-f	1005 abc	25.0 a	4436 a-e
9	SW 9628	1400 a	13 bcd	3 a	7.3 ab	1181 cde	758 abc	24.8 a-d	984 abc	25.1 a	4324 a-e
10	WL652HQ	1473 a	13.3 abc	3 a	10 ab	1382 ab	649 b-f	24.9 a-d	789 bc	25.9 a	4292 a-e
11	Ameristand 801S	1738 a	12.3 de	2.3 a	7.3 ab	1168 de	518 ef	25.0 abc	818 abc	25.1 a	4241 a-e
12	Ameristand 802	1545 a	13 bcd	2.7 a	6.7 ab	1060 ef	703 a-d	24.1 b-g	928 abc	25.2 a	4235 a-e
13	Cibola	1424 a	13 bcd	3 a	7.3 ab	1400 a	677 a-e	24.6 a-f	730 c	25.2 a	4230 a-e
14	Yosemite	1617 a	13 bcd	3 a	10 ab	1226 a-e	499 ef	25.1 ab	824 abc	24.8 a	4166 a-e
15	Ameristand Salado	1569 a	13 bcd	2 a	8.3 ab	1136 def	547 def	24.2 b-g	884 abc	25.3 a	4136 b-e
16	HybridForce 800	1521 a	13 bcd	2.3 a	5.7 ab	972 f	597 c-f	23.9 c-g	979 abc	24.1 a	4069 cde
17	Magna 901	1521 a	12.7 cd	3 a	5.7 ab	1184 cde	493 f	23.3 g	770 c	25.0 a	3967 de
18	SW 9710	1280 a	11.7 e	2 a	4 b	1047 ef	605 c-f	23.9 d-g	907 abc	25.0 a	3838 e
	AVERAGE	1555	13.1	2.7	8.4	1228	664	24.2	906	24.9	4353
LSD (P=.05)		606	1	1	7	185	181	1	308	2	619

Data followed by the same letter is not statistically different.