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Performance of Alfalfa Cultivars in the Brazos River Bottom near College Station

Procedure

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Abstract

A test involving 26 cultivars was initiated in fall 1983 to evaluate yields and stand persistence. Yields varied from 5.8 to 7.5 tons with a total of six cuttings in 1984. Baron, Vanguard, 555, Florida 77, Southern Special, and Hi-Phy were in the highest yielding group. Treatment for alfalfa weevil damage was required in late March. The soybean looper damaged foliage in early November with some apparent differences among cultivars.

Introduction

Alfalfa is well adapted to the Brazos River Bottom soils. Production of 7 to 8 tons of hay with one or two irrigations is usually obtained. Yields without irrigation may be somewhat less depending on rainfall during the growing season. Several cultivars appear to be well adapted. Stand persistence of 3 years is common in experimental plots and more than 3 years appears possible with the best cultivars.

Twenty-six cultivars (see list in Table 1) were planted on October 5, 1983 in plots consisting of five 12-inch rows, 20-feet long with six replications. The plot area was prefertilized with 0-60-60 which was disk-incorporated. The area also was treated with pre-emergence herbicide (Balan) prior to planting at the rate of 3 qt/A. Alfalfa weevil damage became apparent in late March and the plots were sprayed with Furadan on March 27. Soybean looper damage occurred in early November but no treatment was applied. The plot area was irrigated at 3 inches per application on April 30, September 20 and September 26-27, 1984. The plots were harvested six times in the early bloom stage.

Results

Yield data are given in Table 1. Yields ranged from a high of 7.5 to 5.8 tons/A. The highest yielding named cultivars were Baron, Vanguard, Florida 77, Southern Special, and Hi-Phy. The first cutting averaged more than 2 tons, the second cutting about 1.5 tons, and the third and fourth cuttings about 1 ton each.

Soybean looper damage occurred in early November and the plots were cut before reaching the early bloom stage because of the increasing damage. There appeared to be differences among cultivars in the degree of damage, thus observations on the degree of damage were recorded (Table 2). The data on damage were variable with a wide range among cultivars.

TABLE 1. YIELD OF ALFALFA VARIETIES IN THE BRAZOS RIVER BOTTON NEAR COLLEGE STATION, 1984

Entry No.	Cultivar	Date of Harvest						Total
		Apr. 17	May 28	June 26	Aug. 2	Sept. 11	Nov. 8	
		Pounds of Dry Forage Per Acre						
22	N-27	4,922	3,295	2,044	1,889	1,434	1,405	14,989 a ¹
23	N-29	4,431	3,230	1,996	2,133	1,449	1,437	14,776 a-b
7	Baron (Certified)	4,305	2,953	1,932	2,303	1,763	1,520	14,776 a-b
9	Vanguard	4,386	3,388	1,620	1,903	1,394	1,746	14,437 a-c
2	555	3,735	3,240	1,974	2,287	1,476	1,392	14,104 a-d
3	Fla 77	4,040	3,002	1,886	1,856	1,657	1,591	14,032 a-d
11	Southern Special	4,062	3,251	1,908	2,103	1,292	1,348	13,964 a-d
1	XAN 21-1-0042-24R	3,573	3,053	1,939	2,225	1,680	1,393	13,863 a-e
17	Hi-Phy	3,997	3,400	1,702	1,876	1,217	1,643	13,835 a-e
24	77-8 Cab	4,313	3,232	1,571	1,927	1,258	1,412	13,713 b-e
20	Saranac	4,238	3,732	1,659	1,479	1,222	1,339	13,669 b-e
18	Cimarron	4,056	3,208	1,736	1,713	1,282	1,515	13,510 c-f
5	Kanza	3,786	2,896	1,895	1,974	1,501	1,427	13,479 c-f
6	Vancon	4,258	3,176	1,646	1,866	1,056	1,455	13,457 c-f
13	Apollo (Certified)	4,186	3,098	1,524	1,840	1,341	1,361	13,350 c-f
25	WL Southern Special	3,666	2,923	1,959	2,006	1,316	1,427	13,297 c-f
12	WL-318	3,740	3,186	1,754	1,920	1,013	1,594	13,207 d-f
14	Armor (Certified)	4,083	3,292	1,489	1,590	1,210	1,536	13,200 d-f
26	Siriver Lucerne (Aust.)	3,718	2,684	1,915	1,722	1,451	1,597	13,087 d-g
8	Team	4,582	3,106	1,440	1,575	897	1,315	12,915 d-g
4	Raidor	4,243	3,331	1,395	1,661	932	1,351	12,913 d-g
19	Defender	4,069	3,078	1,443	1,607	905	1,612	12,714 e-g
15	Arc	3,942	3,014	1,321	1,710	1,061	1,254	12,302 f-h
21	Williamsburg	3,722	2,990	1,383	1,499	972	1,445	12,011 g-h
10	Weevlchek	3,584	2,934	1,487	1,648	970	1,336	11,959 g-h
16	Classic	4,047	2,403	1,313	1,469	902	1,373	11,507 h

¹Total yields followed by a common letter are not significantly different (P 0.05), Duncan's Multiple Range.

KEYWORDS: Alfalfa/hay production/yield/cultivars/stand.

TABLE 2. SOYBEAN LOOPER DAMAGE ON ALFALFA CULTIVARS IN LATE FALL 1984

Entry Number	Cultivar	Percent Damage
10	Weevlchek	12 a ¹
4	Raidor	18 a
9	Vanguard	25 ab
24	77-8 Cab	27 ab
18	Cimarron	27 ab
3	Florida 77	28 ab
17	Hi-Phy	28 ab
8	Team	29 ab
21	Williamsburg	30 ab
14	Armor	31 ab
19	Defender	31 ab
20	Saranac	35 ab
13	Apollo	37 ab
16	Classic	42 ab
6	Vancor	43 ab
15	Arc	46 bc
12	WL-318	47 bc
25	WL Southern Special	52 bc
2	555	56 c
11	Southern Special	60 cd
5	Kanza	60 cd
23	N-29	64 cd
7	Baron	76 d
22	N-27	76 d
26	Siriver (Australia)	78 d
1	XAN 21-1-0042-24R	79 d

¹Values followed by a common letter are not significantly different, Duncan's Multiple Range Test. C.V. = 42.2 percent.

Stands were uniform in 1984. If differences in stand survival occur in later years they will be recorded and reported.