

PUBLICATIONS

2000

EFFECT OF AMISORB ON NUTRIENT UPTAKE OF COASTAL BERMUDAGRASS

G. W. Evers and A. D. Davidson

Background. AmiSorb is marketed as a nutrient absorption enhancer that improves uptake of soil nutrients. It has been proposed that AmiSorb increases root length, number of root branches, and density of root hairs. Recommended rates for annual crops are 1 to 3 qt/acre applied in no less than 15 gal of water/acre or liquid fertilizer. Present retail cost is about \$8/qt. Previous studies have been with annual crops such as wheat, corn, cotton, soybeans and various vegetables with varying results. There are no data available on the response of perennial forage crops to AmiSorb. If AmiSorb does improve nutrient uptake efficiency, it would increase bermudagrass production at a given fertilizer rate.

A study was carried out at the Texas A&M University Agricultural Research and Extension Center at Overton to determine the influence of AmiSorb rate and time of application on Coastal bermudagrass production. AmiSorb was applied to a Coastal bermudagrass sod at 0, 1, 2, and 4 qt/acre in 16.5 gal water/acre on May 7, 1997. Each of these initial application rates was followed up with either no additional AmiSorb, 0.5 qt after the first harvest or 0.5 qt after the first and second harvest. The study was harvested five times during the growing season.

Research Findings. AmiSorb applied 7 May at 2 qt/acre resulted in more forage production than the other initial AmiSorb treatments at the first harvest, although differences were less than 300 lb/acre (Table 1). The May applied AmiSorb treatments did not influence forage production for any of the later harvests or total yield. Averaged across the initial AmiSorb rates applied on 7 May, applying 0.5 qt after the first harvest increased second harvest yields by 350 lb DM/acre. There was a significant first (7 May) by second (23 June) AmiSorb application interaction. Coastal bermudagrass yield differences between the 0 and 0.5 qt/acre rate applied after the first harvest were 700 lb DM/acre at the 2 qt/acre rate and 500 lb DM/acre at the 4 qt/acre rate. None of the June 23 AmiSorb application treatments influenced individual harvests after the second harvest on 23 July. When 2 qt/acre was applied 7 May, an additional 0.5 qt/acre after the first harvest did increase total yield.

Application. In this one year AmiSorb rate study, Coastal bermudagrass responded positively to the 2 qt rate applied in May and to an additional 0.5 qt applied after the first harvest. However, yield increases were small and inconsistent and probably not economical when considering the cost of AmiSorb.

Table 1. Influence of AmiSorb rate and application time on Coastal bermudagrass production in 1997.

May 7 AmiSorb	June 18 harvest	June 23 AmiSorb	July 23 harvest	July 28 AmiSorb	August 25 harvest	October 16 harvest	Total
qt/acre	lb/acre	qt/acre	lb/acre	qt/acre	lb/acre		
0	2777	0	3134 a‡	0	2150 a	1376 a	9,438 a
0		0.5	3110 a	0	2096 a	1273 a	9,131 a
0		0.5		0.5	2517 a	1298 a	9,826 a
Mean	2777 B†		3117 A		2232 A	1315 A	9,465 A
1	2883	0	2812 a	0	2298 a	1380 a	9,539 a
1		0.5	3116 a	0	2311 a	1032 a	9,307 a
1		0.5		0.5	2273 a	1437 a	9,542 a
Mean	2883 B		2948 A		2293 A	1283 A	9,462 A
2	3066	0	2659 b	0	2178 a	1246 a	9,461 b
2		0.5	3326 a	0	2207 a	1258 a	10,036 a
2		0.5		0.5	2115 a	1423 a	9,883 a
Mean	3066 A		3103 A		2166 A	1309 A	9,650 A
4	2764	0	2624 b	0	2132 a	1219 a	8,846 a
4		0.5	3179 a	0	2282 a	1300 a	9,354 a
4		0.5		0.5	2118 a	1314 a	9,543 a
Mean	2764 B		2993 A		2177 A	1278 A	9,248 A

†Main plot treatment means within a column followed by the same uppercase letter are not significantly different at the 0.05 level, Waller-Duncan Multiple Range Test.

‡Subplot yields within main plot treatments followed by the same lower case letter are not significantly different at 0.05 level, Waller-Duncan Multiple Range Test.