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2012 Crop Results

Vitazyme on Bermudagrass

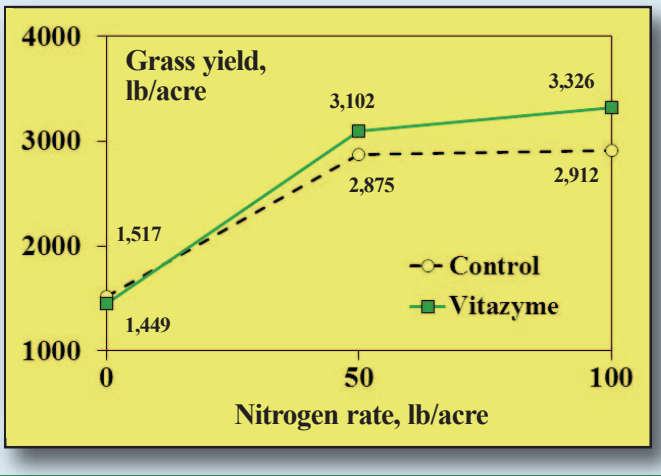
Researcher: James Rogers, Ph.D. *Location*: Noble Foundation, Headquarters Units I and III Farms, and Pasture Demonstration Farm, Ardmore, Oklahoma *Variety*: common bermudagrass
Soil type: Windthorst fine sandy loam (Unit I and Unit II farms), and Wilson silt loam (Pasture Demonstration farm)
Experimental design: Areas of bermudagrass on three sites (the Pasture Demonstration farm was added in 2011) were selected to evaluate the effectiveness of Vitazyme, with and without nitrogen fertilizer, on the growth, productivity, and quality of bermudagrass pastures. Plot sizes were 10 x 30 feet, with three replications.

Treatment	Vitazyme	Nitrogen
	oz/acre	
1	0	0
2	13	0
3	0	50
4	13	50
5	0	100
6	13	100

Fertilization: Nitrogen was applied at the rates shown in the table above in May, and again after each harvest. Soil tests were taken each year, and phosphorous and potassium were applied according to recommendations once a year.
Vitazyme application: 13 oz/acre sprayed on the grass in May, and after each cutting
Yield results: A total of ten harvests were completed on the plots from 2010 to 2012. This included two harvests from Units I and III in 2010, one harvest from Units I, III, and the Pasture Demonstration farm in 2011, and one harvest from each farm in 2012. Data were analyzed using the Proc Mixed procedure of the Statistical Analysis System (SAS); replication, year, and location were treated as random effects.

Treatment	Yield[1]	Yield change
	lb/acre	lb/acre
1. 0 N	1,517 b	—
2. 0 N + Vita	1,449 b	(-) 68 (-4%)
3. 50 N	2,875 a	—
4. 50 N + Vita	3,102 a	227 (+8%)
5. 100 N	2,912 a	—
6. 100 N + Vita	3,326 a	414 (+14%)

[1]Means followed by the same letter are not significantly different at P = 0.05. Comparisons are made at the same N level.



Increase in grass yield with Vitazyme

50 lb/acre N 8%
100 lb/acre N 14%

While there were no significant differences in grass yield at the same nitrogen level, even so there is a definite trend for yields to increase with Vitazyme at both 50 and 100 lb/acre of nitrogen.

Quality results: Samples of the hay were analyzed is a similar manner as were yield data.

Treatment	Crude protein[1]	Calcium	Phosphorus[1]	Potassium[1]	Magnesium	ADF[2]	NDF[3]	TDN[4]
	%	%	%	%	%	%	%	%
1. 0 N	9.2 b	0.25	0.212 b	1.93 ab	0.23	34.0	65.9	62.4
2. 0 N + Vita	9.2 b	0.25	0.210 b	1.86 b	0.23	34.0	65.9	62.3
3. 50 N	9.4 b	0.20	0.218 ab	2.08 ab	0.22	34.4	67.2	62.1
4. 50 N + Vita	9.6 b	0.26	0.216 ab	2.13 a	0.24	34.7	66.7	61.8
5. 100 N	12.1 a	0.24	0.226 a	2.09 ab	0.26	32.6	64.3	63.5
6. 100 N + Vita	12.2 a	0.25	0.227 a	2.12 a	0.26	32.3	64.0	63.7

[1]Means followed by the same letter are not significantly different at P = 0.05.
[2]ADF = acid detergent fiber; [3]NDF = neutral detergent fiber; [4]TDN = total digestible nutrients.

While there are no significant differences between Vtiazyme treated and untreated nutrients at each nitrogen level, there are increases in calcium and potassium at the 50 and 100 lb/acre nitrogen rates with Vitazyme.

Conclusions: In this replicated three-year study in Oklahoma of the effect of Vitazyme on the yield and nutritional value of bermudagrass, at three locations, no significant increases in these parameters occurred with Vitazyme at any of the three nitrogen levels. However, Vtiazyme boosted the yield by 8% at the 50 lb/acre N rate, and by 14% at the 100 lb/acre N rate. The product also appeared to improve calcium and potassium levels of the forage at these two nitrogen rates, but the other elements and nutritional parameters were not affected. Vitazyme holds promise as a potential enhancer of bermudagrass yield and quality in dryland range settings in Oklahoma.