FLUID FERTILIZERS FOR SOD PRODUCTION

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Project Objectives

Examine N fertilizer programs (source and rate) to determine the best management for timely establishment of hybrid bermudagrass (*C. dactylon* L. x C. *transvaalensis* [Pers.])

Methods

- 2009 and 2010 studies, TGRU, Auburn, AL.
- 'Tifway' hybrid bermudagrass.
- Sod harvested in spring of each year, area tilled.
- Three N Sources: 1) UAN (32-0-0), 2) AS (21-0-0), 3) 29-2-3 (20.88% urea-triazone and 8.12% urea).
- Three N rates: 3, 4, 6 or 6 lb N/1,000 ft² growing season⁻¹

Methods – N Rates

- N applied as 4 split applications of 0.75, 1.0, 1.25 or 1.5 lb N 1,000 ft⁻² month⁻¹.
- 2009 applied in June, July, August, Sept.
- 2010 applied in April, May, June and July.
- AS granular
- UAN and 29-2-3 applied as liquids in total carrier volume of 4 gal 1,000 ft⁻²

Fun Conversions

Turfie (total)	Fieldie	Metric	
lbs 1,000 ft ⁻²	lbs A ⁻¹	kg ha⁻¹	
0.75 (3)	32.7 (131)	36.6 (146)	
1.0 (4)	43.6 (174)	48.8 (195)	
1.25 (5)	54.5 (218)	61.0 (244)	
1.5 (6)	65.3 (261)	73.2 (293)	
gallons 1,000 ft ⁻²	gallons A ⁻²	liters ha ⁻²	
4	174	1,630	

Methods

- 4 replications, RCB, 6 x 8 foot plot size
- Collected data included:
 - Percent establishment collected via line transect and digital photography
 - Shoot density (Spring of the following year)
 - Sod strength

August 13 2009

UAN-6 lbs N

UAN-4 lbs N

UAN - 5 lbs NNH₄SO₄ - 3 lbs N

Sieve and

UAN – 3 lbs N 29-2-3 – 6 lbs N

UAN - 4 lbs N

Control

UAN-6 lbs N

Percent establishment of Tifway hybrid bermudagrass as affected by N source, 2009



Establishment of hybrid bermdagrass as affected by date and N rate, 2009







Establishment of Tifway hybrid bermudagrass as affected by date and N rate, 2010





Sod Strength - 2009

N Source	Oct 19 2009	19 April 2010	
	foot lbs at which sod tore		
Control	25.3 b	41.9 c	
UAN	49.6 a	73.0 b	
29-2-3	65.4 a	87.5 a	
NH ₄ SO ₄	47.1 a	74.4 b	



Sod Strength - 2010

N Source	14 July 2010	17 Aug 2010	18 Nov 2010
	foot lbs at which sod tore		
Control	0 b	17.6 b	29.6 b
UAN	21.7 a	37.5 a	49.5 a
29-2-3	22.9 a	37.8 a	51.9 a
NH ₄ SO ₄	23.2 a	36.6 a	51.7 a

Sod strength of hybrid bermudagrass as affected by N rate, 2010



Results to Date

- For any variable no significant N rate x N source interaction.
- Shoot density (2009 data only, to date) unaffected by N source or N rate.
- N Source Sod strength or establishment largely unaffected by N source, 2009 and 2010.
- Application of UAN never caused phytotoxicity issues to sod.

Results to Date

- N Rate In 2009 establishment was maximized near the 6.0 lb N rate. In 2010 establishment was maximized at around 5.6 lb N rate.
- N Rate In both 2009 and 2010 sod strength was maximized at an N rate of 4.6 lb N/M/season.
- Use of a foliar N source such as UAN does not negatively affect sod establishment or strength.

