Technical Bulletin

ESN® Use for Winter Ryegrass Production

STUDY DESCRIPTION

Ryegrass is a forage grass grown throughout the Southeastern US as a source of winter grazing for cattle. Because winter weather patterns are unpredictable in the South, nitrogen management can be challenging. During periods of warm weather, the ryegrass can have rapid growth, provided N is available. When temperatures approach freezing, vegetative growth is greatly reduced. The following study was designed to determine if ESN would allow for more grass production during the winter than traditional N sources. Plots were treated with 400 lbs/ac of 15-5-10 as a starter on 10/12/12. Additional N treatments were made during the growing season to deliver 60 lbs N/ac per application. Sources of additional N included ESN, ESN + Urea in a 50:50 blend, Urea, and Ammonium Nitrate.

RESULTS SUMMARY

- Treatments containing ESN produced more pounds of dry matter than ammonium nitrate in each of the first 3 sample dates.
- Treatments containing ESN produced more pounds of dry matter than all other N sources on the second and third sample dates.

TRIAL DETAIL

- *Conducted in Poplarville, MS by Dr. Daniel Rivera, Mississippi State University*
- *Soil type = Basin loam, pH = 6.3, OM = 1.6%*
- *Previous crop = Bermuda grass*
- *Four replications/treatment*
- *Ryegrass planted October 12*
- *Application dates were November 14, December 19, and March 15*
- *Harvest dates were December 14, January 24, March 8, and April 13*

ESN®
SmartNitrogen

Want To Know More?

To make ESN a part of your fertilization program, contact an authorized retailer or representative.

www.SmartNitrogen.com

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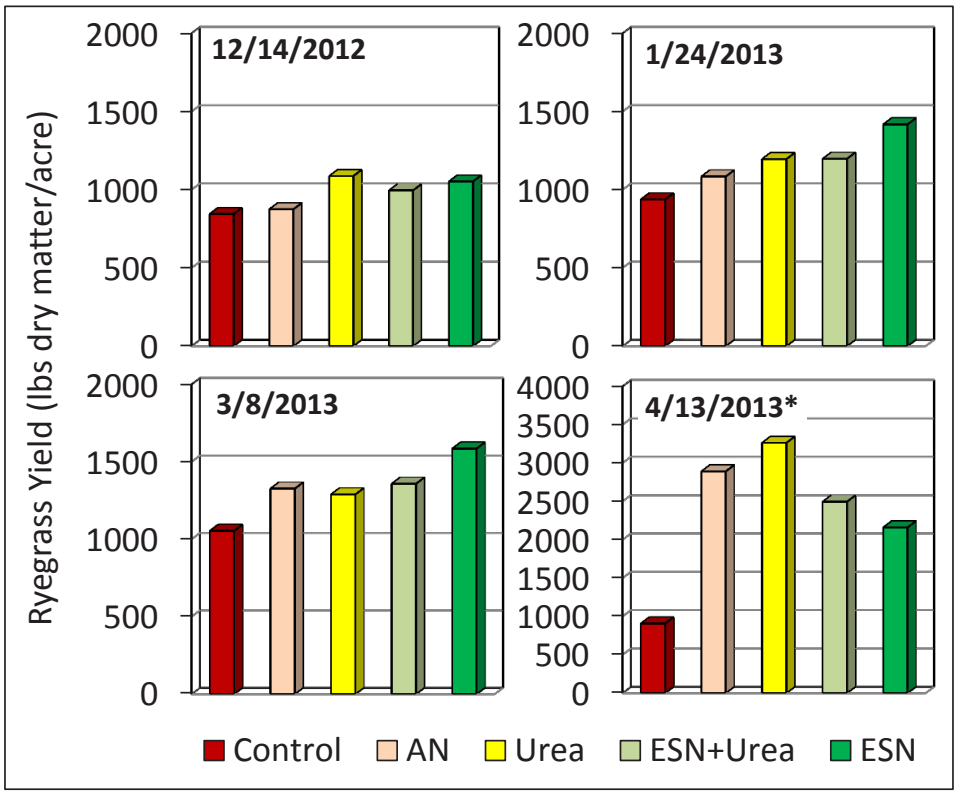
FERTILIZER TREATMENTS

Fertilizer Treatment[1]	Comments[2]
Check	No fertilizer applied
ESN 100%	ESN 100%
ESN + Urea (50:50 Blend)	50% ESN and 50% Urea
Urea 100%	100% Urea
Ammonium Nitrate 100%	100% Ammonium Nitrate

1 All treatments were applied at 60 lbs N/A per application. ESN = Environmentally Smart Nitrogen (44-0-0). AN = ammonium nitrate (33-0-0).

SUPPORTING DATA



**Plots were harvested 28 days after application made on 3/15. This did not allow adequate time for ESN treatments to fully release, and yields were affected.*

USE RECOMMENDATIONS

Apply ESN at planting in a 75:25 blend with a soluble nitrogen source to provide nitrogen during the winter.

Remaining nitrogen needs should be applied in a top-dress application in the spring. If applied prior to early February, use 100% ESN. After this time, apply a blend of ESN and soluble N in a 75:25 blend.

ESN®

ESN Technology Goes Beyond Traditional Nitrogen

- *Enhances N use efficiency*
- *Improves crop yield and quality*
- *Provides convenience through ease of use*
- *Environmentally responsible*

How ESN Technology Works

ESN technology uses a flexible polymer coating to encapsulate a nitrogen (N) granule. The coating protects the N from loss mechanisms, releasing it when the crop needs it most.

Nitrogen release thru the polymer coating is controlled by two of the factors in crop growth: soil moisture and temperature. Moisture creates an N solution inside the coating, and the solution moves through the coating at a rate controlled by soil temperature. Nitrogen supply is, therefore, more closely matched with crop demand.

ESN is backed by over 600 crop years of testing by independent, third party researchers. The data is proof of performance for a unique product.

ESN® SmartNitrogen