Technical Bulletin

Effects of ESN® on Cotton Yields in Mississippi

STUDY DESCRIPTION

A Mississippi study demonstrates how ESN can increase yields in irrigated cotton production. ESN protects nitrogen (N) from loss inside its unique protective coating and supplies N to the crop when it is needed. The result is increased cotton yields and improved N-use efficiency.

Cotton plants need N throughout the growing season. Most N uptake by a cotton plant takes place in the period of about 40-80 days after planting and continues up to 140 days after planting. ESN may be used to meet this long season demand.

In this Mississippi study, ESN applied to the surface of the soil at lay-by yielded higher than or equal to urea.

RESULTS SUMMARY

When averaged across rates, 33% ESN and 100% ESN produced higher yields than urea.

It is not known why average yields for 66% ESN were not different from urea while 33% and 100% ESN were greater.

TRIAL DETAIL

- *Conducted in Stoneville, MS by Dr. Bobby Golden, MS State Univ.*
- *Soil Type = Fine sandy loam*
- *Previous Crop = Cotton*
- *Six Replications/treatment*

ESN®
SmartNitrogen

Want To Know More?

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

www.SmartNitrogen.com

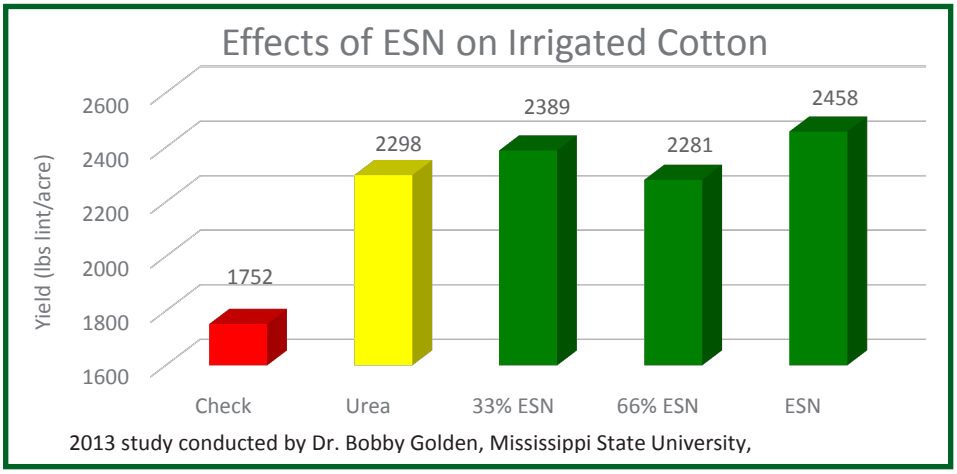
Nutrien™

FERTILIZER TREATMENTS

Fertilizer Treatment
Urea – AP – 60 lbs N/ac
Urea – AP – 90 lbs N/ac
Urea – AP – 120 lbs N/ac
33% ESN – AP – 60 lbs N/ac
33% ESN – AP – 90 lbs N/acre
33% ESN – AP – 120 lbs N/acre
66% ESN – AP – 60 lbs N/ac
66% ESN – AP – 90 lbs N/acre
66% ESN – AP – 120 lbs N/acre
100% ESN – AP – 60 lbs N/ac
100% ESN – AP – 90 lbs N/acre
100% ESN – AP – 120 lbs N/acre
Urea – SD – 60 lbs N/ac
Urea – SD – 90 lbs N/ac
Urea – SD – 120 lbs N/ac
33% ESN – SD – 60 lbs N/ac
33% ESN – SD – 90 lbs N/acre
33% ESN – SD – 120 lbs N/acre
66% ESN – SD – 60 lbs N/ac
66% ESN – SD – 90 lbs N/acre
66% ESN – SD – 120 lbs N/acre
100% ESN – SD – 60 lbs N/ac
100% ESN – SD – 90 lbs N/acre
100% ESN – SD – 120 lbs N/acre

ESN = Environmentally Smart Nitrogen (44-0-0)
Urea (46-0-0)
AP = At planting
SD = Sidedress

SUPPORTING DATA



2013 study conducted by Dr. Bobby Golden, Mississippi State University,

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®
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