

# International Conference on Enhanced-Efficiency Fertilizers

An IFA-New Ag International Event  
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Hotel Hyatt Regency, Miami, FL, USA

## ENHANCED EFFICIENCY FERTILIZERS

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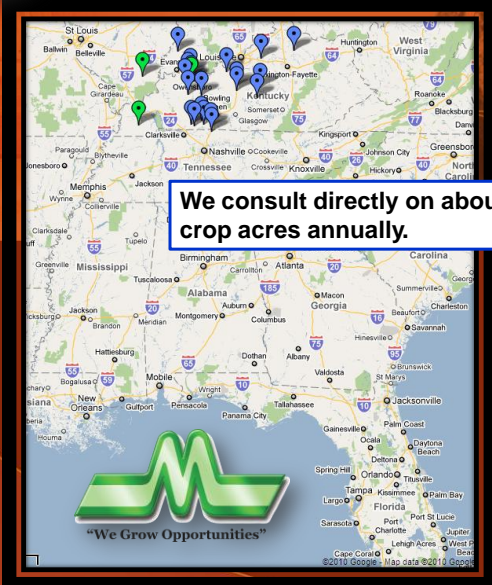






## Opti-Crop is...

- A team of over 20 crop consultants and support staff serving farmer-clients in the Lower Ohio & Mid-Mississippi Valley regions of the U.S.
- A consultancy employing a total systems management approach to row crop and small grain production.
- Concerned about the fate of applied nutrients, both from economic and environmental standpoints.





**We consult directly on about 200,000  
crop acres annually.**

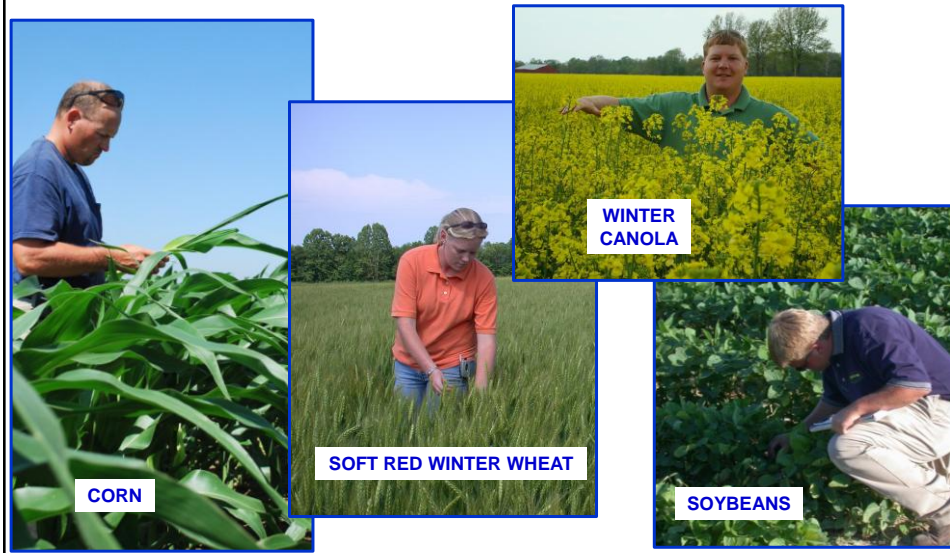


"We Grow Opportunities"

The image features a map of the Southeastern United States, including parts of Missouri, Arkansas, Louisiana, Mississippi, Alabama, Georgia, and Florida. Numerous blue location pins are scattered across the map, indicating various agricultural sites. A text box with a blue border and white background is overlaid on the map, containing the text "We consult directly on about 200,000 crop acres annually." In the bottom left corner of the map area, there is a stylized green logo consisting of three vertical bars of varying heights, resembling a pulse or a stylized 'M', with the tagline "We Grow Opportunities" written below it. The background of the slide is a dark orange gradient with a faint globe on the right side.



## Principal crops Opti-Crop consultants work with:



## What are Opti-Crop clients doing to improve nitrogen efficiency?

- Applying N at rates carefully matched to realistic yield goals, soil characteristics and surface residue levels
- Timing applications to coincide with periods of maximum crop uptake (sidedress vs. preplant, split applications)
- Use inhibitors and stabilizers
  - Agrotain (NBPT urease inhibitor)
  - Agrotain Plus (NBPT + DCD nitrification inhibitor)
  - N Serve (nitrapyrin nitrification inhibitor)
  - ESN (polymer-coated urea)

## Anhydrous ammonia ( $\text{NH}_3$ ) is primary source of nitrogen used on corn



Total application rates of 150 – 200 pounds/acre are common.



We strongly recommend the use of N-Serve (nitrpyrin) nitrification inhibitor with most  $\text{NH}_3$  applications, especially for preplant treatments or those made on more poorly drained soils.

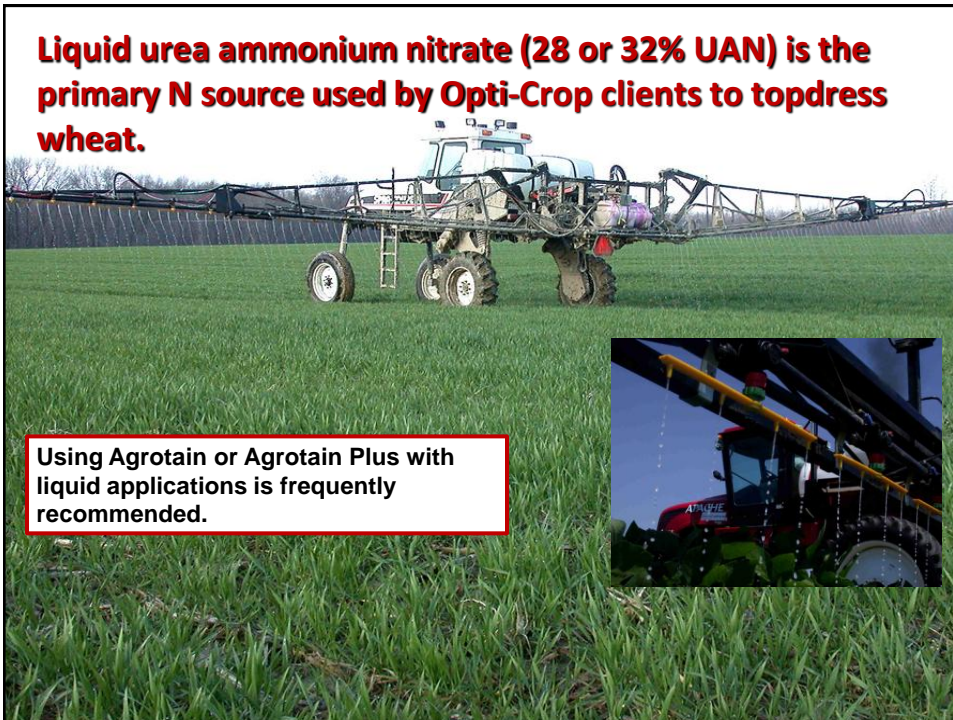
Dry urea is also widely used in Opti-Crop's service region, not only on corn, but on wheat and grass forages too.



Application accuracy and protection against volatilization losses are the chief management concerns associated with urea.

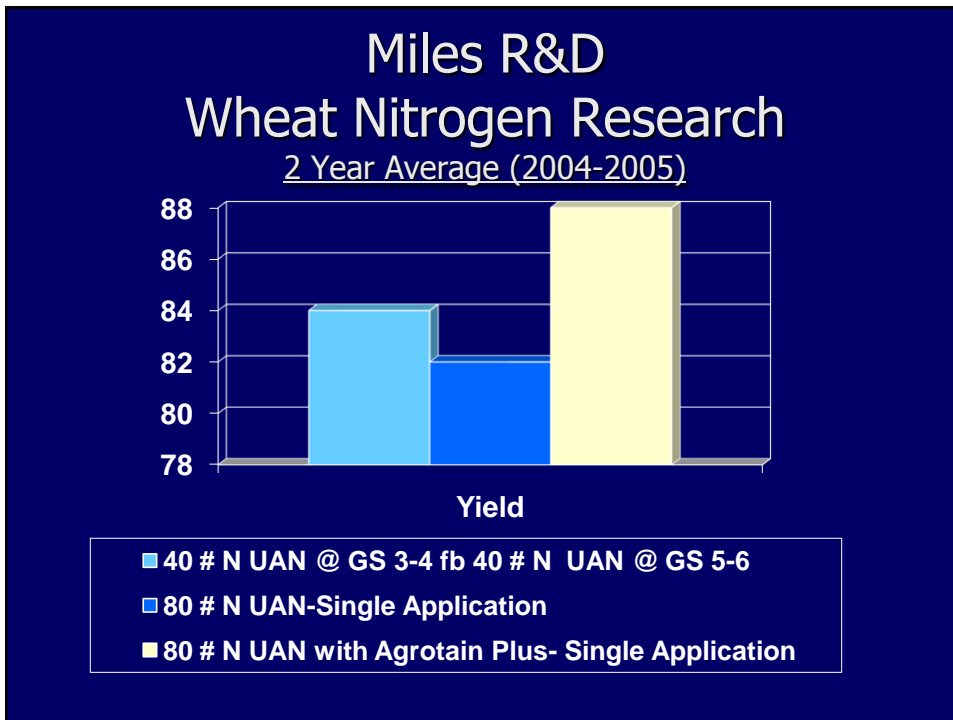
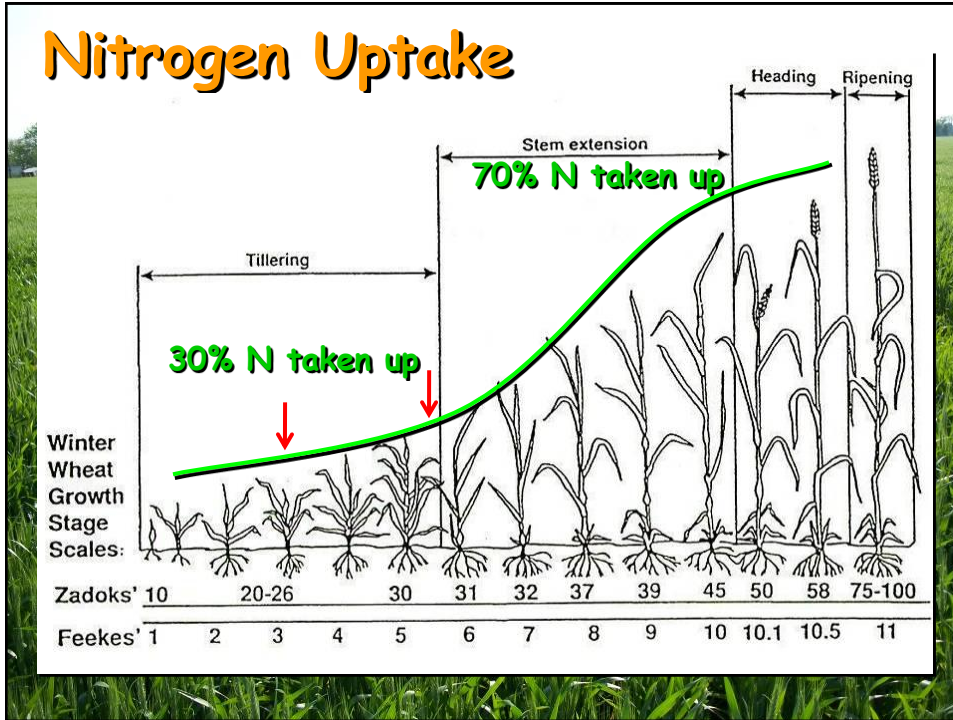


**We highly advise using Agrotain urease inhibitor with virtually all surface-based urea applications.**



**Liquid urea ammonium nitrate (28 or 32% UAN) is the primary N source used by Opti-Crop clients to topdress wheat.**

**Using Agrotain or Agrotain Plus with liquid applications is frequently recommended.**



## But what about the economics?

Agrotain Plus adds about 8.5 cents (US) to each pound of actual N applied as 28% UAN (18.7 cents per kg).

80 lbs N/acre x \$ 0.085 Agrotain Plus cost/lb. = \$ 6.80 additional cost per acre (about \$17.00 additional cost per hectare).

6 bushels additional yield per acre x \$ 4.00/bushel = \$ 24.00 additional gross revenue/ac (\$60 additional gross revenue per hectare).

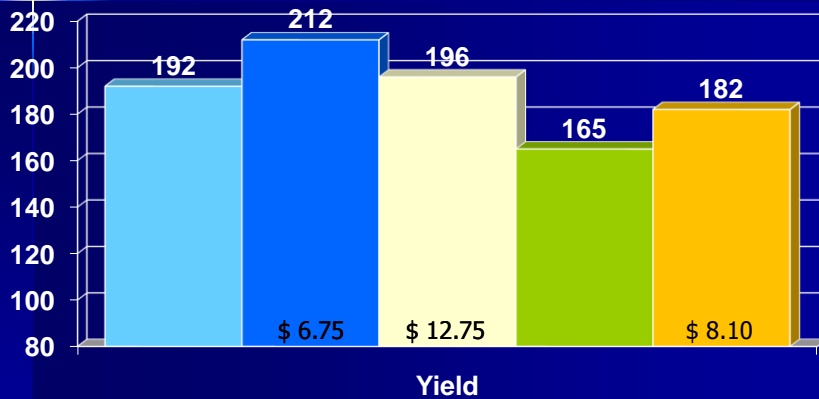
\$ 24.00 - \$ 6.80 = \$ 17.20 additional net income per acre (\$ 60.00 - \$17.00 = \$ 43.00 additional net/ha).

## Miles R & D Corn Nitrogen Management Studies

- Agrotain
- Agrotain Plus
- N-Serve



## 2007 Corn Nitrogen Management Study 150# N (preplant surface broadcast)



■ UAN ■ UAN w Agrotain ■ UAN w Agrotain Plus ■ Urea ■ Urea w Agrotain

## 2007 Corn Nitrogen Management Study 90# N (preplant surface broadcast)



■ UAN ■ UAN w Agrotain ■ UAN w Agrotain Plus ■ Urea ■ Urea w Agrotain

## Agrotain Data on Urea (Corn)

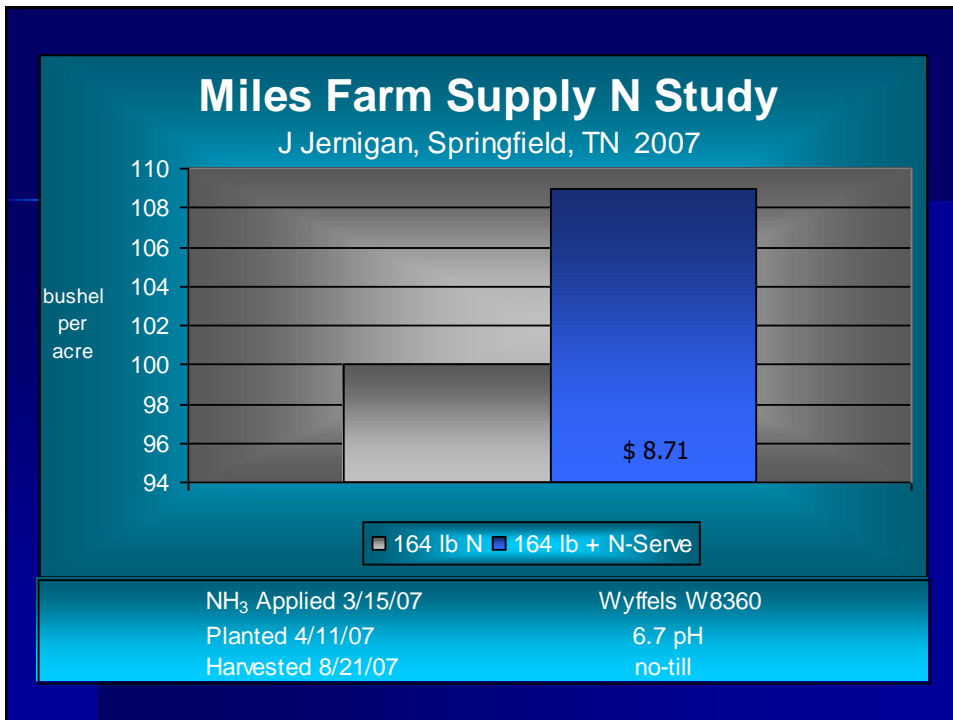
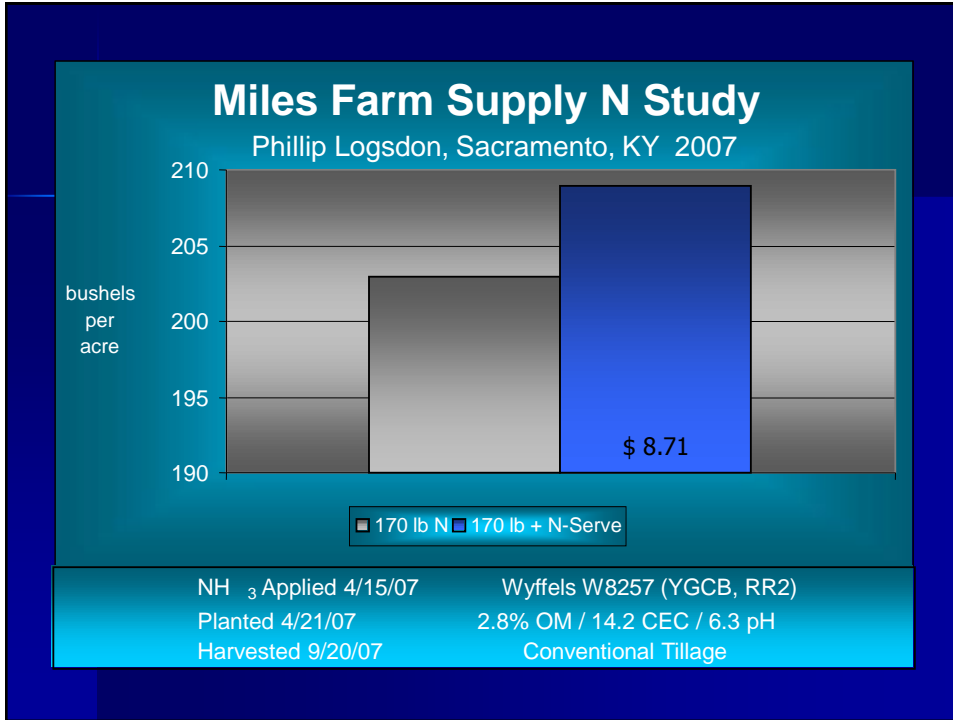
6 years data

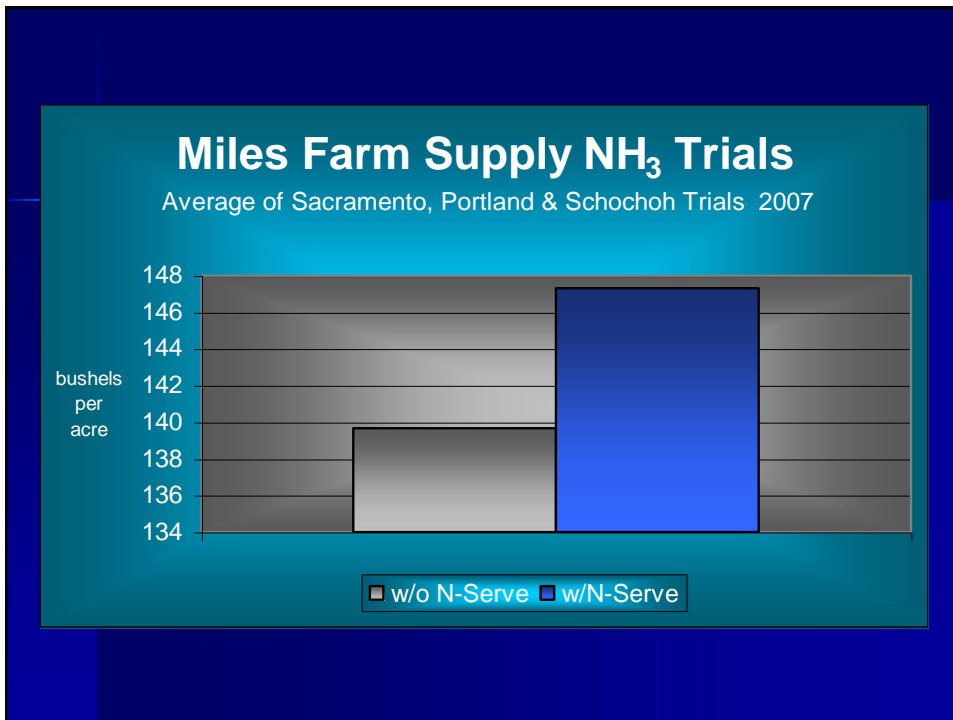
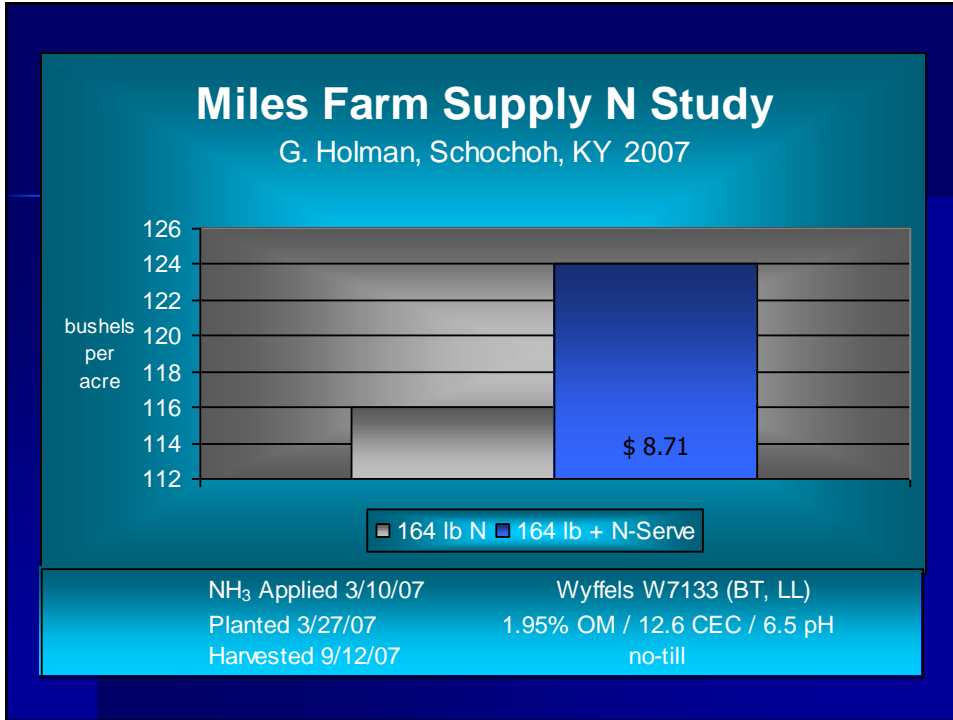
Low N Rates	100-120# N
Med N Rates	150# N
High N Rates	180-200# N

## Agrotain Data on Urea (Corn)

6 years data

	Untreated	Agrotain
Low N	151	158
Med N	160	171
High N	168	179



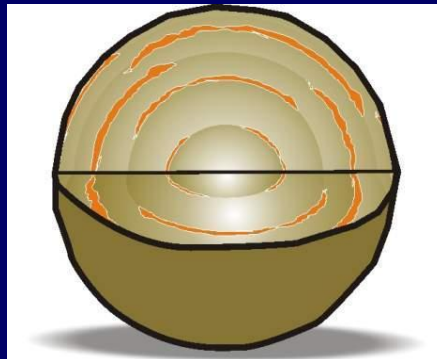


## Conclusion: Nitrogen Stabilization Products & Technologies Make \$ense

- They indeed protect against N loss
- They deliver agronomic value
- They improve grower profitability
- They offer an important layer of environmental protection



During the manufacturing process, sulfur is added and forms partial layers around a developing granule.



Has an analysis of 12-40-0-10. Half of the sulfur is in the sulfate form, the other half in the elemental form.

**MES10: More uniform sulfur dispersal  
across the soil surface**

**Typical Sulfur Blend**



**MES10**

