AGROTAIN®
INTERNATIONAL, L.L.C.

Southern Conservation Tillage Systems Conference
North Florida Research & Education Center
Quincy, Florida
25 – 27 June 2007

The Next Level of Conservation: No-Till and StabilizedNitrogen™ Technology

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Agrotain International
St. Louis, Missouri

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Topics to be Covered

- Challenges facing agricultural producers
- Solutions to production challenges
- The StabilizedNitrogen™ Advantage

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Challenges facing Agriculture

- Current world population – 6.2 billion
- 76 million people per year – 9 billion by 2050
- Affluence and protein requirements are increasing
- Current world grain reserves – 54 days
- Cropland acres per capita - .64 acres

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Challenges facing Agriculture

- Last 50 years - 20% of worlds topsoil lost
- Last 30 years – 13.5% decrease in US cropland acres
- Last 15 years – 19% cropland lost
- Soil loss per pound of food produced – 12 pounds of farmable soil

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To Meet Future Demands and Maximize Crop Production

- Intricate mix of:
  - Selection of the right crop variety
  - Using crop protection products
  - Working to improve soil quality
  - Efficient use of nutrients

Source: Crop Nutrients Council

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Improvement of Soil Quality

- Reduce current level of erosion
- Reduce the of loss of cropland acreage
- Improve the soil quality of our cropland acres
- Solution: Adoption of continuous no-till conservation

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Continuous No-Till Conservation

- Addresses
  - Food production
    - Lands more productive
  - Economic benefits
    - Less time, energy and labor
  - Environmental benefits
    - Reduces losses to water and air resources
    - Provides habitat and food sources for wildlife

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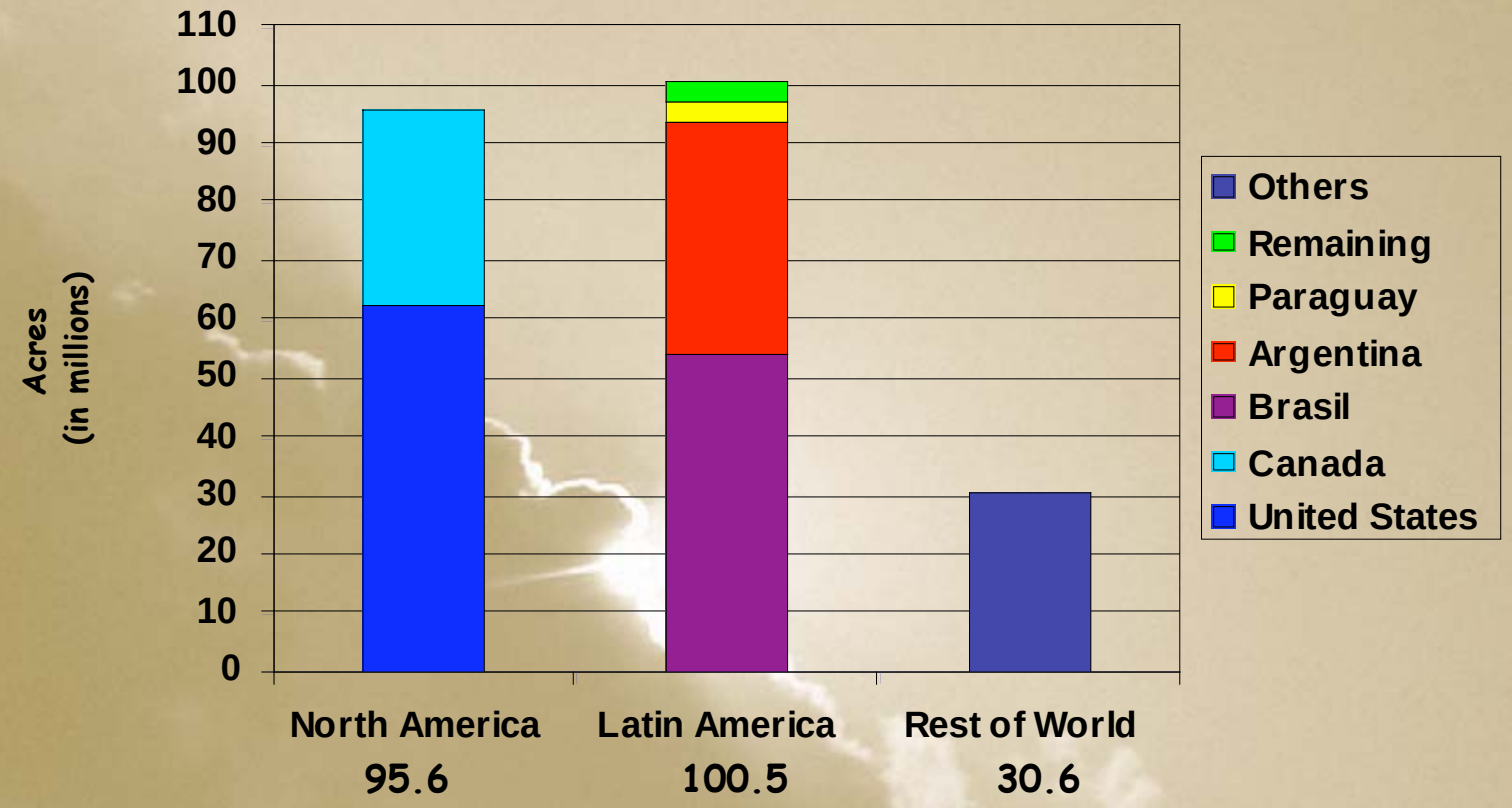
World No-Till Numbers



Source: Rolf Derpsch, Conservation Agriculture and No-Tillage Consultant, Asuncion, Paraguary

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Challenges with No-Till

- Worldwide – no-till accounts for 6% of total cropland
- US adoption – 23 to 25%
- Worldwide adoption has been slow
- Need to continue to promote no-till conservation and improved soil quality

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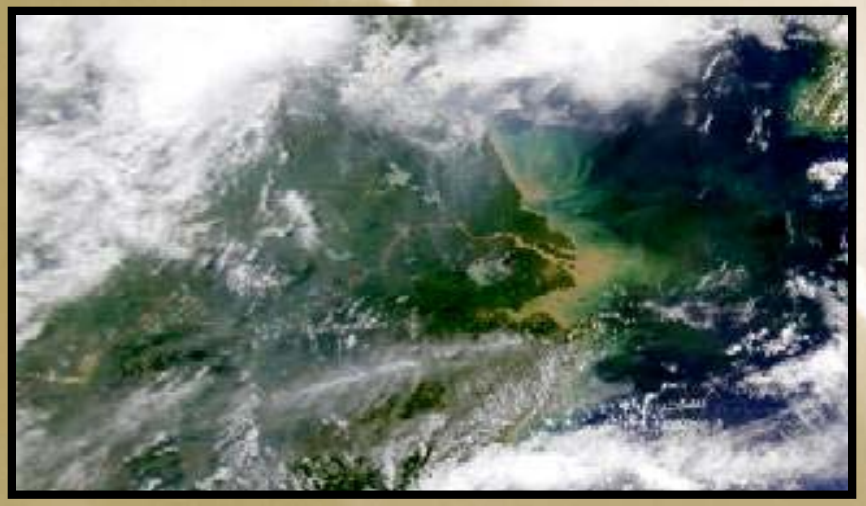
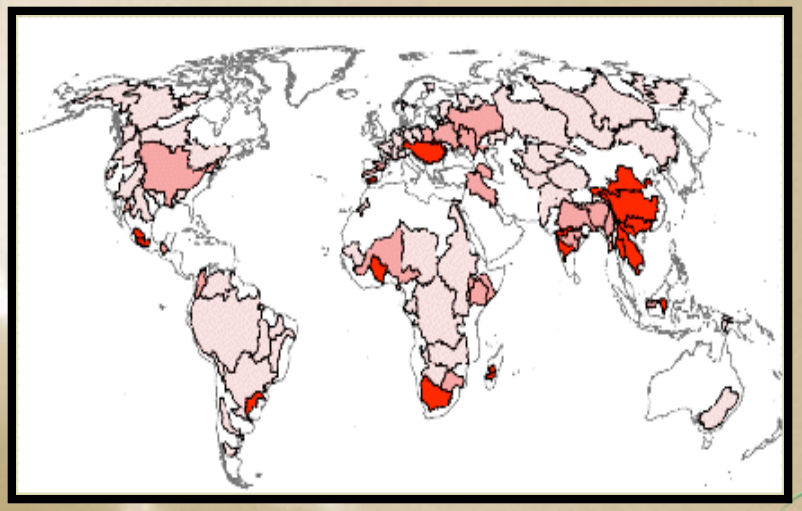
View from Above





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To Meet Future Demands and Maximize Crop Production

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Source: Crop Nutrients Council

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Worldwide Fertilizer Consumption

- Past 50 years fertilizer usage increased
  - Total fertilizer (4 fold)
  - Total nitrogen (6 fold)
- Nitrogen usage today – 78.5 million tons per annum

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Nitrogen Fate

(Plant Uptake 40 - 70%)

Immobilization	NH_4/NO_3	10 - 40%
Erosion	NH_4	0 - 20%
Denitrification	NO_3	5 - 35%
Leaching	NO_3	0 - 20%
Volatilization	Urea	0 - 30%

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Man Made Ammonia Emissions Worldwide

FERTILIZER	USE	NH_3 Volatilization Loss
	(million tons per annum)	Total (million tons per annum)
Ammonium Sulfate	2.4	0.4
Urea	34.4	7.3
Ammonium Nitrate	7.5	0.5
Calcium Ammonium Nitrate	3.6	0.1
Others	30.6	2.9
Total Fertilizers	**78.5**	**11.2**

Source: FAO/IFA, 2002

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Issues with Nitrogen Loss

- Wasted money
- Weaker plant
- Reduced density
- Environmental issues
  - Greenhouse gas issues (2.5% ends up as N_2O)
  - Increased nitrate levels in surface and ground water

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Nitrogen Focus

- Future world demands for food, fiber, feed and energy should focus on enhanced efficiency fertilizer technology
- Which will address
  - Improved nutrient efficiency
  - Environmental improvement
    - Reduces nitrogen losses to air and water
    - Reduces NH_3 volatilization
- Works with both conventional and no-till systems
- Savings in
  - Time
  - Labor
  - energy

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Nitrogen Options

Soluble Nitrogen	Slow Release Nitrogen	Controlled Release Nitrogen	StabilizedNitrogen™
Urea	Methylene Urea	Sulfur Coated Urea	Urea w/urease and/or nitrification inhibitors
Ammonium Sulfate	Urea Formaldehyde	Polymer Coated Urea	
Potassium Nitrate	IBDU		
Calcium Nitrate	Natural Organics		
Foliars	Other		
Other			

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StabilizedNitrogen™

- Urea or urea solution that contains:
  - Urease inhibitor and/or a
  - Nitrification inhibitor
- Provides plant feeding at the right place, right time and in the most advantageous form
- Protects the environment
  - Air quality
  - Water quality
- Economic benefits
- Quality results and performance

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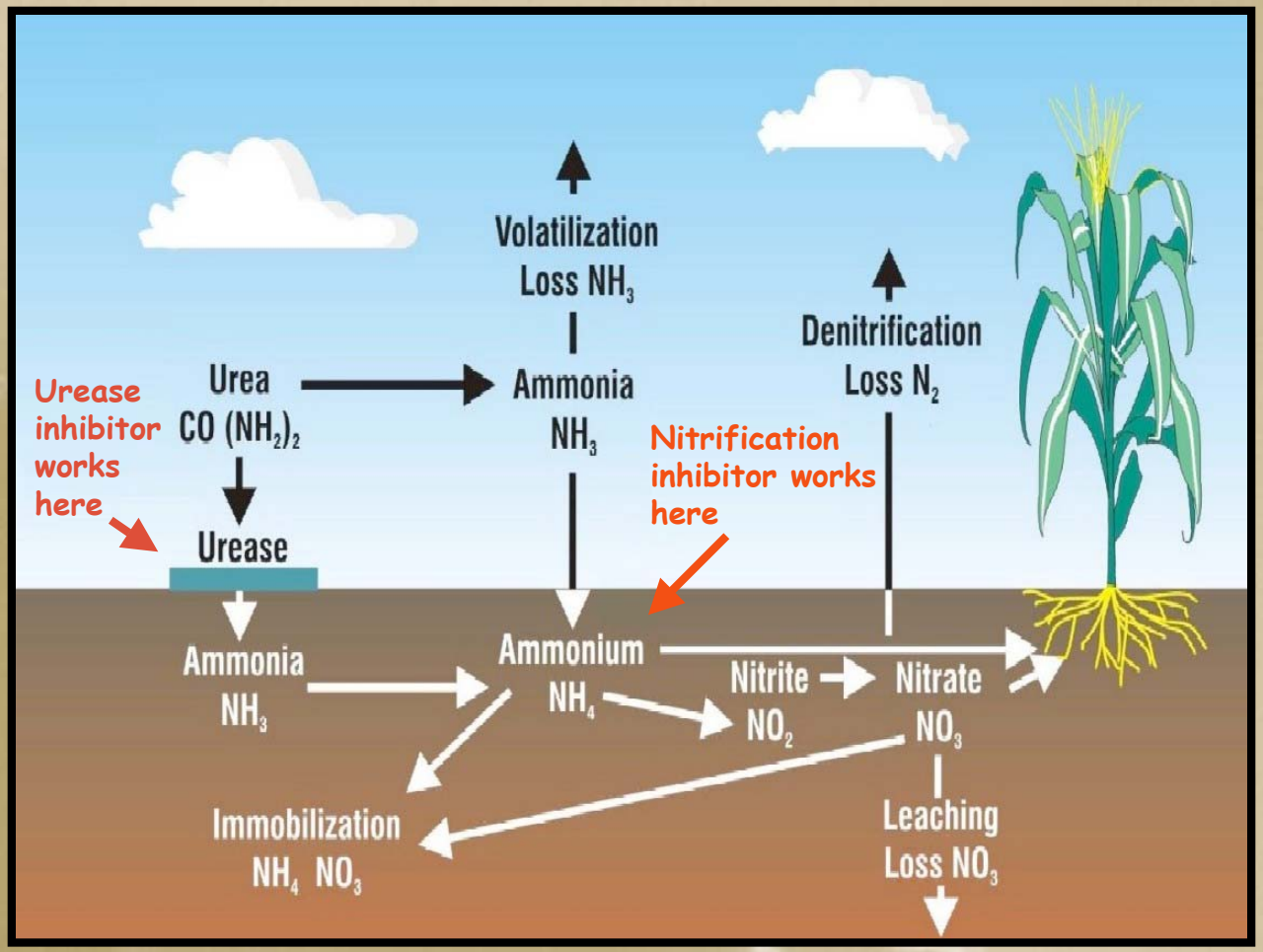
Simplified Nitrogen Cycle



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The Ammonium Advantage

	Nitrate (NO_3^-)	Ammonium (NH_4^+)
Plant Available	Yes	Yes
Resists Denitrification	No	Yes
Resists Leaching	No	Yes
Enhances P Uptake	No	Yes
Enhances Micronutrient Uptake	No	Yes

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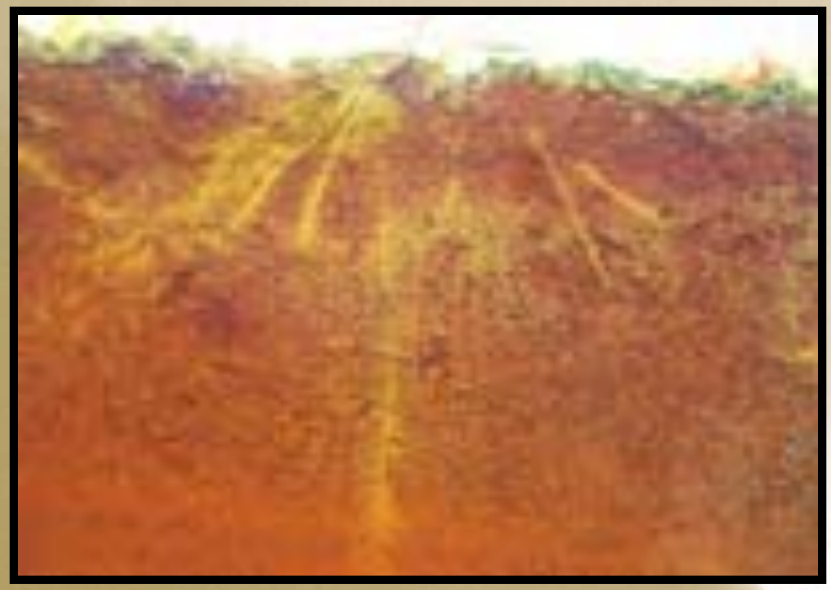
Rhizosphere pH as Indicated by Bromocresol Purple pH Indicator

Ammonium Nitrogen



Ammonium uptake lowers pH in root zone

Nitrate Nitrogen

Nitrate uptake raises pH in root zone

Source: Dr. Joseph Heckman, Rutgers University, 1996

An acidic rhizosphere suppresses many soil-born diseases and makes micronutrients more available

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The StabilizedNitrogen™ Advantage

- StabilizedNitrogen™ Research
  - Volatility studies
  - Leaching studies
  - Yield
    - Corn
    - Wheat
    - Cotton
    - Forage
  - Economic benefits

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Research Results

- 18 Countries, 33 States
  - 106 Institutions
  - 181 Researchers
- 1,340 Trials
  - Corn, Wheat, Rice, Sugarcane, Cotton, Sorghum, Melons, Onions, Bromegrass, Tobacco, Coffee, Canola, Barley, Potatoes, Sugarbeets, Fescue, Ryegrass, Kentucky Bluegrass, other Turf and Pasture

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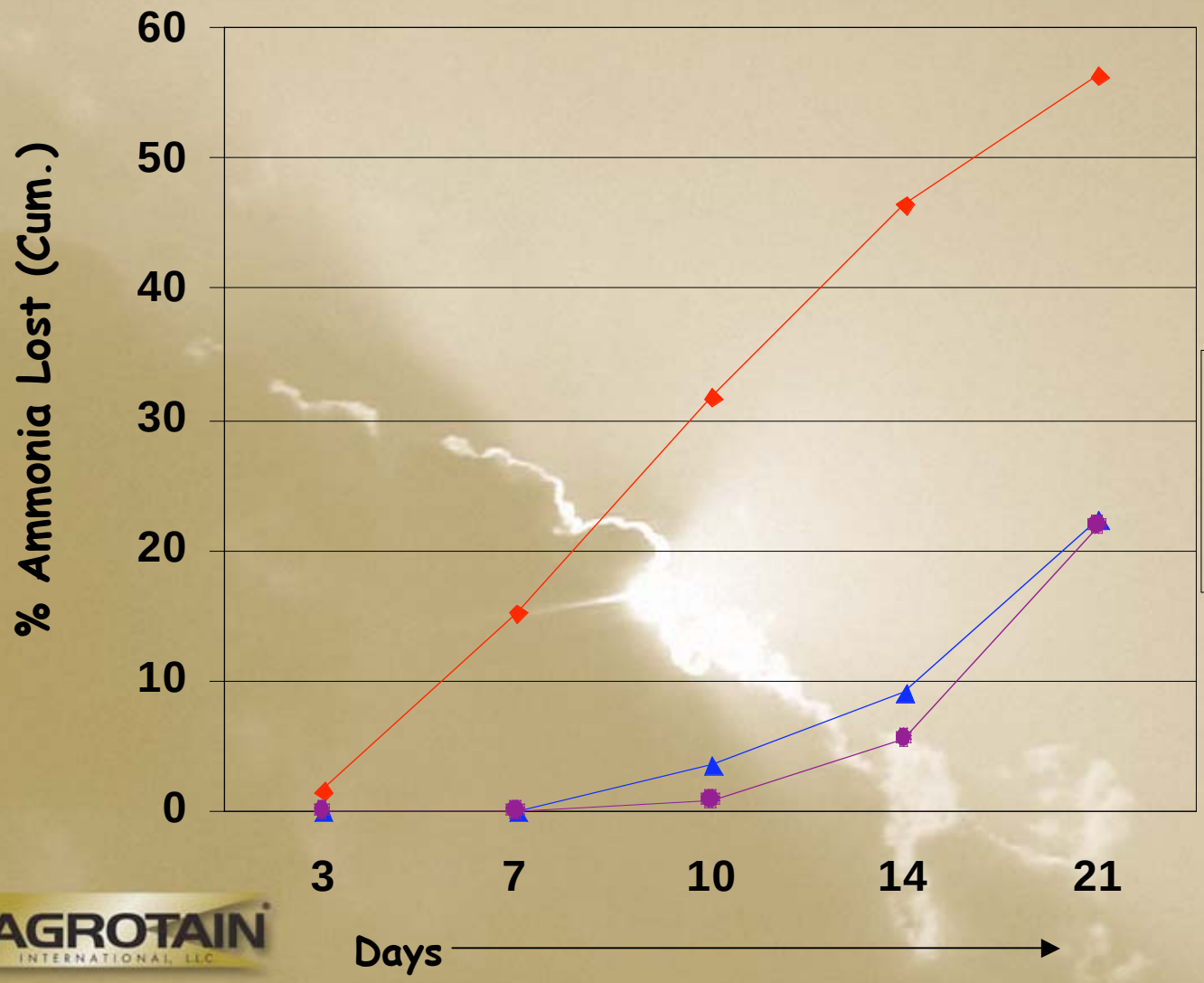
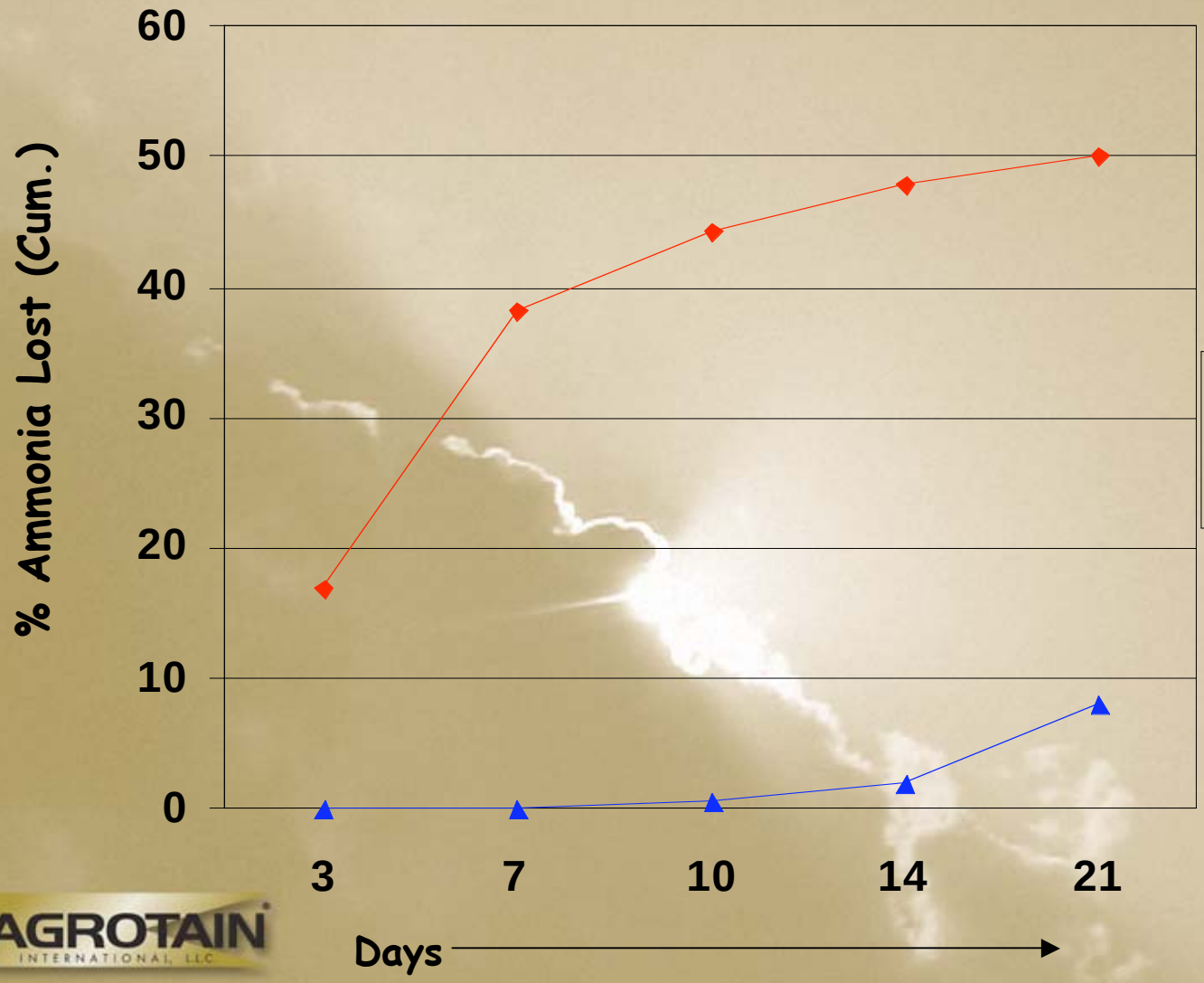
Volatilization Study
University of Illinois



Source: Willis Thornsberry, Ph.D, Consultant, July 26, 2006

Volatilization Study
University of Kentucky



Source: Willis Thornsberry, Ph.D, Consultant, July 26, 2006

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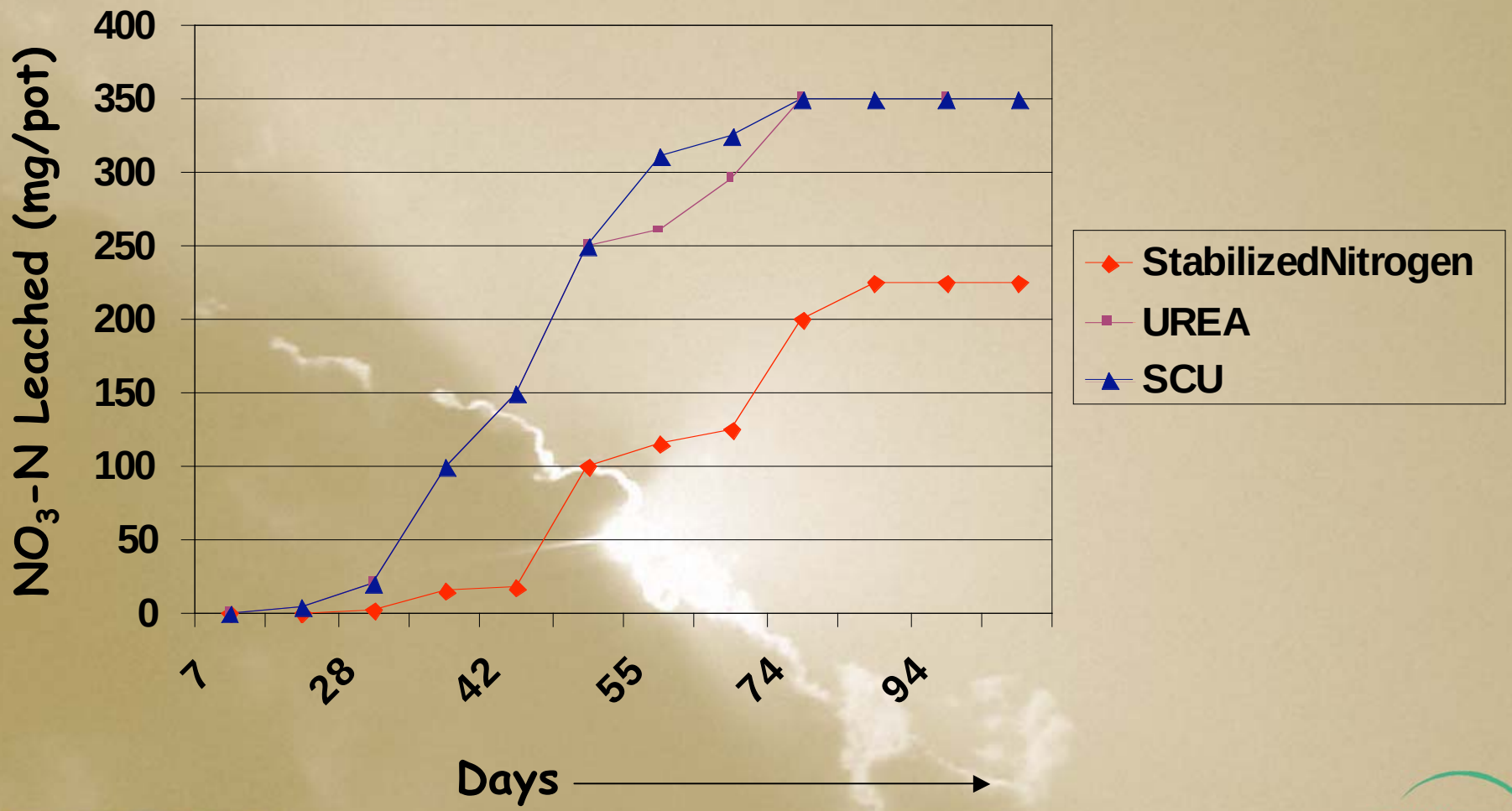
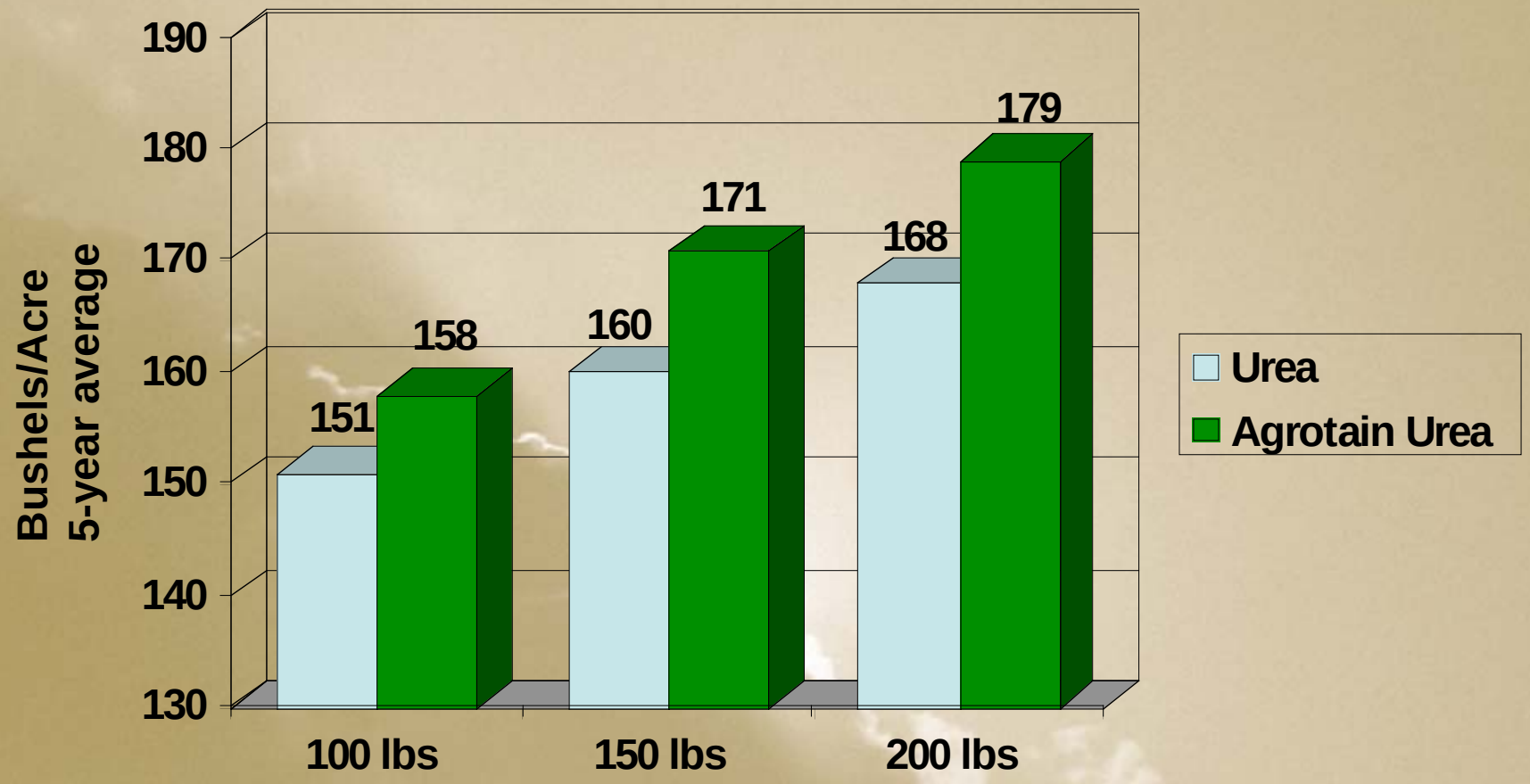
Effect of N Source on Quantity of NO_3-N Leached



Source: University of Florida

5 year Corn Study
Russellville and Owensboro, KY
Conducted by Miles Farm Supply



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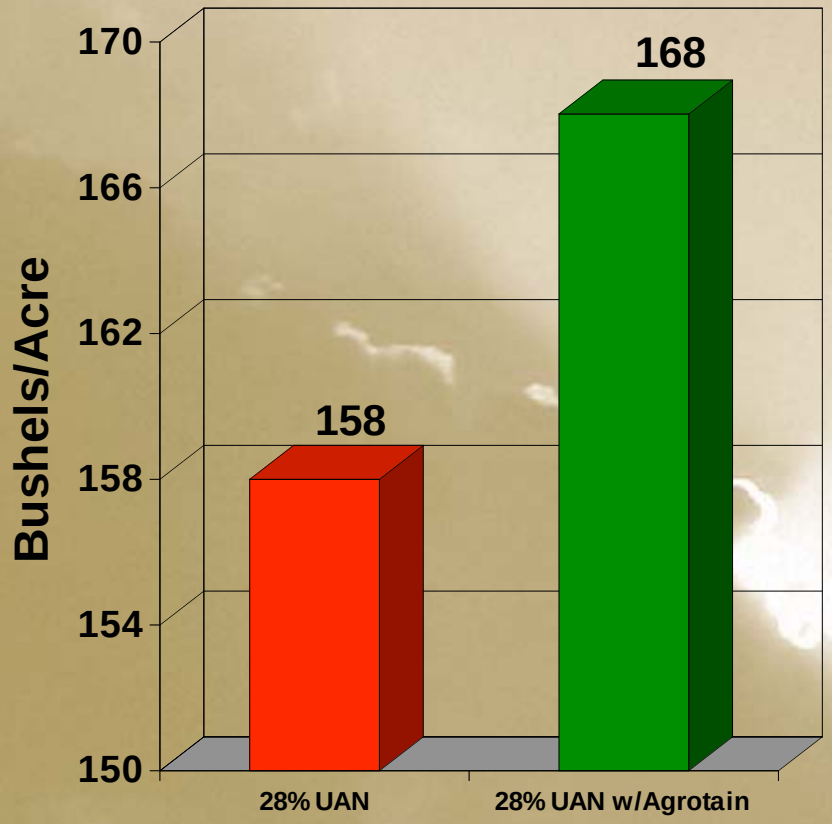
Average of Two Corn Trials
Huron, Kansas 2006



The Agrotain Advantage

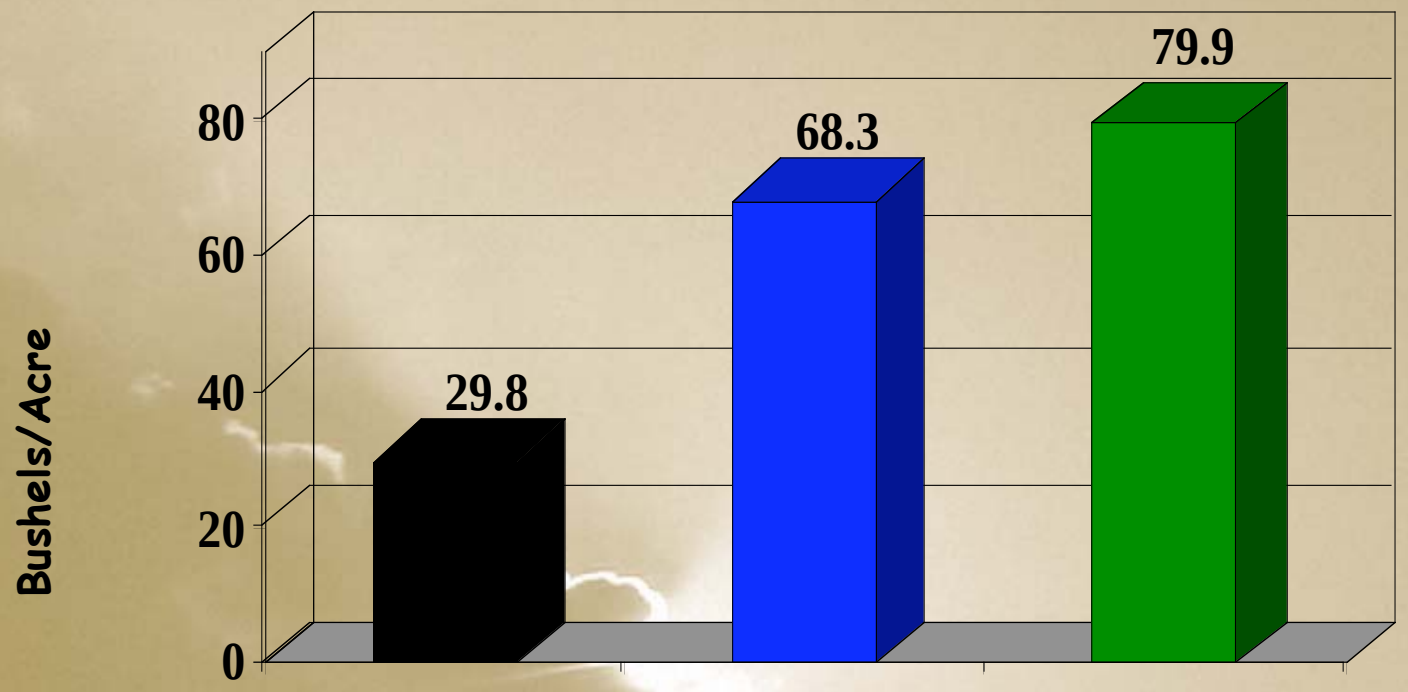
125 lbs of N at Preplant, with Agrotain

Difference	10 bu/acre
Price	$3.50/bu
Agrotain Cost	-$5.40/acre
Advantage	**$29.60/acre**

Example:
500 acre X $29.60/acre = **$14,800**

Source: Jim and Joe Schletzbaum, Huron, KS

Fall Seeded Wheat
Nitrogen Management



60 lbs @ F

Treatment: 40 lbs @ Feeke's 3
eeke's 5

Source: C. Bowley, University of Missouri

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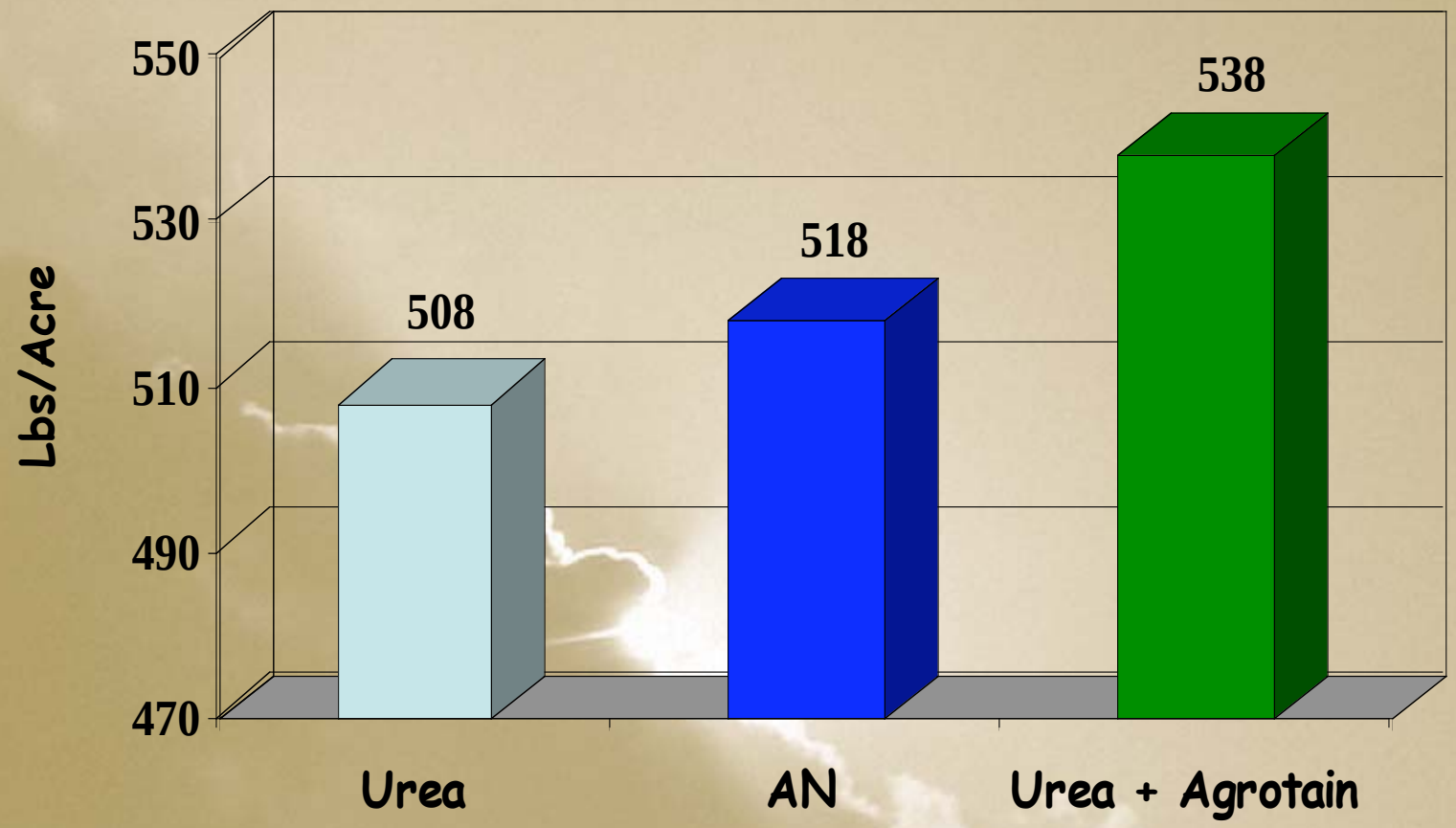
No-Till Cotton Yields



Source: University of Tennessee

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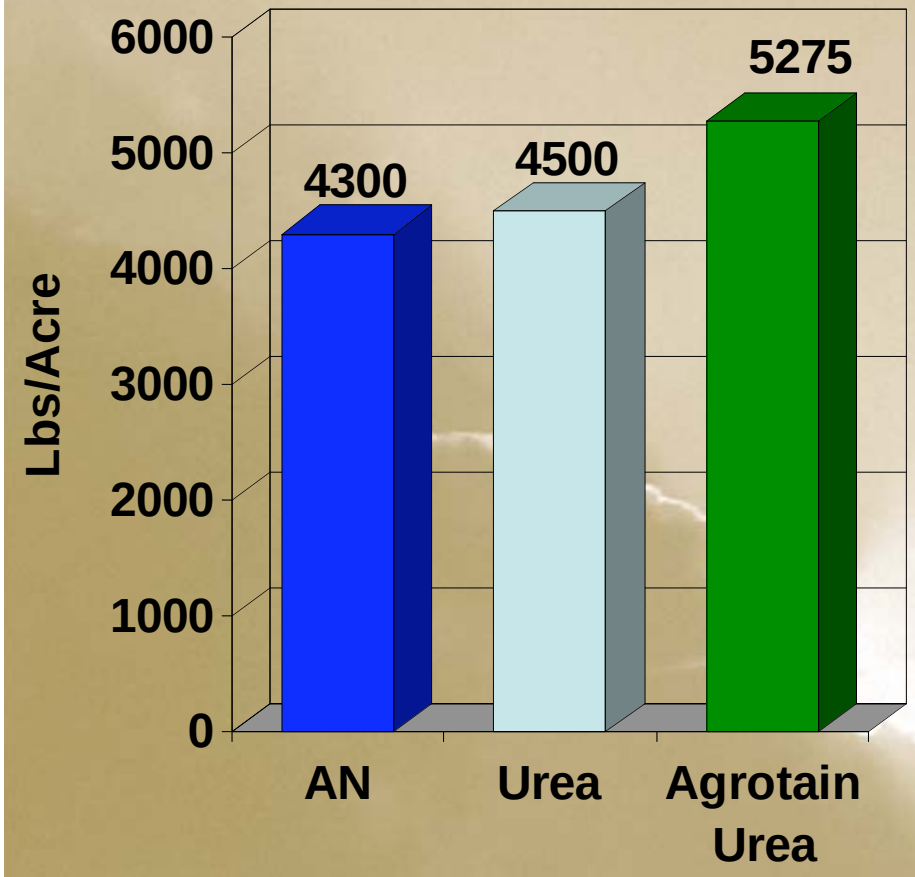
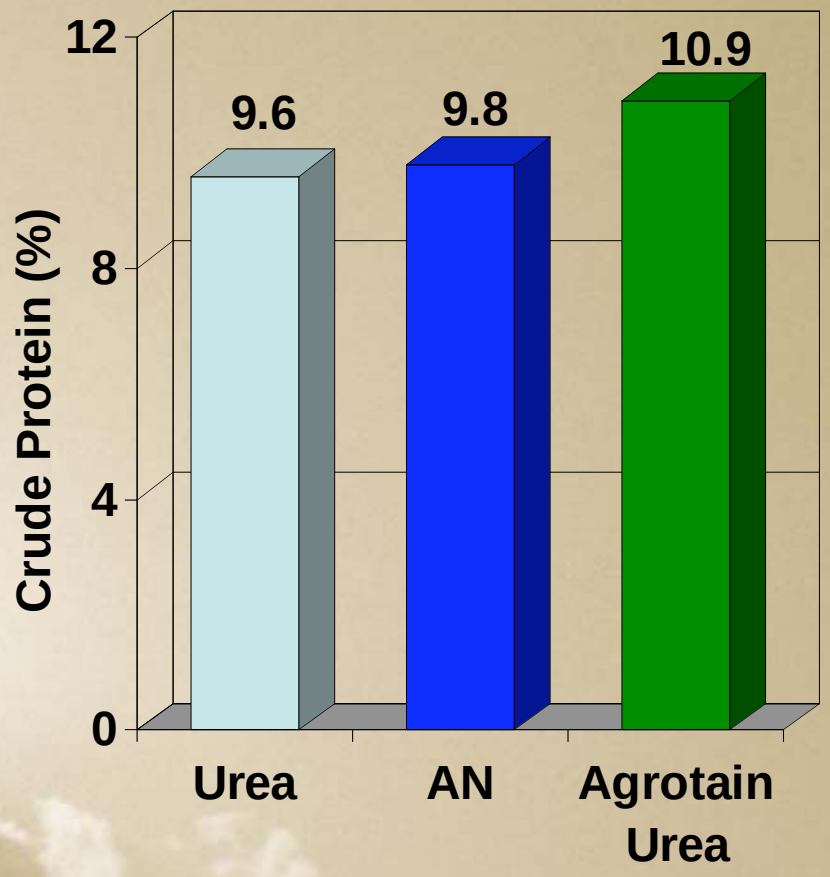
Hulan Edwards Farm - Forage Research
Indianola, OK





Source: Oklahoma State University

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AGROTAIN is an Award Winning Technology

AGROTAIN received First Place as No-Till Farmer's "Best Product of 2005" - Fertility Category!

NO-TILL FARMER PRODUCT OF THE YEAR 2006

- ✔ Equipment
- ✔ Fertility
- ✔ Herbicides
- ✔ Insecticides
- ✔ Seed
- ✔ Seed Treatments

Product of the Year 2005 and 2006

Through a postcard inserted in late summer in No Till Farmer Magazine, 119 products were nominated by readers who ranked their favorite products on a first, second and third place basis. The results were just tallied and the result was an impressive list of No Till's Best Products of 2005. Besides an overall "No Till Product of the Year", six firms are being recognized for their first-place finish in each of the following no-till categories:

From the No Tillers selection, AGROTAIN has been selected as the winner in the fertility category.

The presentation of the award will be made at the 14th annual National No Till Conference, January 11-14, 2006.

These awards are reflective of the need for Improved Nitrogen Efficiency products. With increasing nitrogen costs, the AGROTAIN technology is a viable alternative to just accepting nitrogen losses to the environment. AGROTAIN technology, which is now marketed in over 55 countries, is providing ECONOMIC, AGRONOMIC and ENVIRONMENTAL benefits.

AGROTAIN
Improved Nitrogen Efficiency

Award Winning Technology

AGROTAIN International has won many awards for their innovative *StabilizedNitrogen* products which help reduce nitrogen loss to the environment while providing an economic and agronomic gain to users. By helping to keep nitrogen in the ground where it counts, *StabilizedNitrogen* products help save you money as well as benefiting the environment. They are also very versatile, available in both liquid and granular formation as well as having products for both the Turf & Ornamental and Agricultural Markets.

AGROTAIN awarded "Most Technologically Significant Product" by R&D Magazine!!

R&D 100

AGROTAIN Nitrogen Stabilizer was recognized as one of the 100 most technologically significant new products of the year. R&D Magazine, a publication serving the research community, presented the award. AGROTAIN joins a list of R&D 100 winners dating back to 1963, which includes products such as Polacolor film, the flashcube, antilock brakes, the automated teller and the fax machine.

AGROTAIN was recognized in the environmental category during the 35th anniversary of the R&D 100 Awards program, which was held at the Chicago Museum of Science and Industry. Fifty-five outside experts participated in judging entrants in 15 categories.

AGROTAIN achieves Most Innovative Product Award in Brazil!

Cotrijal Cooperative is one of the largest cooperatives in the state of Rio Grande do Sul, which is located in the southern part of Brazil.

Every year, Cotrijal Cooperative hosts one of the most important Ag Exhibitions/trade shows in the country – EXPODIRETO.

During EXPODIRETO 2005, Fertilizantes Piratini, a subsidiary company of Fertipar Group, was presented with the MOST INNOVATIVE PRODUCT AWARD. They received this award for their efforts in bringing AGROTAIN Nitrogen Stabilizer to the Rio Grand do Sul market. Other companies such as Dow, Monsanto, and Cargill were also competing for the award.

José Claudino dos Santos, owner of Piratini, said that AGROTAIN International greatly contributed to help make this award possible.

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Federal Programs Promoting StabilizedNitrogen™

- StabilizedNitrogen™ is eligible for cost-share assistance under Farm Bill Programs
- USDA Standard 590 (Nutrient Management) encourages use of urease and nitrification inhibitors

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Remember…

Conservation is more than just a word, it's a way of life -and it's forever.

John Hassell

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Agrotain StabilizedNitrogen™ Products

AGROTAIN®
Improved Nitrogen Efficiency

AGROTAIN® PLUS
Dry Concentrate

SuperU® STABILIZED N™

Products for Agriculture

Stabilized Nitrogen Technology

Thank You

John Hassell

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