

A photograph of a cornfield at sunset. The sky is filled with orange and yellow clouds, and the sun is low on the horizon. The foreground is a lush green cornfield. The image is overlaid with a blue geometric pattern consisting of various triangles and lines. The text 'K KOCH' is prominently displayed in the center, with a horizontal line underneath it.

K KOCH™

AGRONOMIC SERVICES

SUPERU[®] Fertilizer

- Granular urea fertilizer with integrated urease and nitrification inhibitors
- Protects against 3 forms of nitrogen loss: volatilization, denitrification and leaching
- Hardness and uniformly sized granules provide wider, more even spread patterns
- Completely soluble and readily plant-available



ANALYSIS

46-0-0

ACTIVE INGREDIENTS

| | |
|-------------|------------------|
| DCD | 0.85% (8500 ppm) |
| NBPT | 0.06% (600 ppm) |

CENTURO™ Nitrogen Stabilizer

The next-generation nitrification inhibitor for anhydrous ammonia and UAN is EFFECTIVE and FLEXIBLE.

- Reduces nitrate leaching potential
- Slows denitrification loss
- Optimizes yield and NUE
- Gentle on equipment
- Easy to transport, use, and store

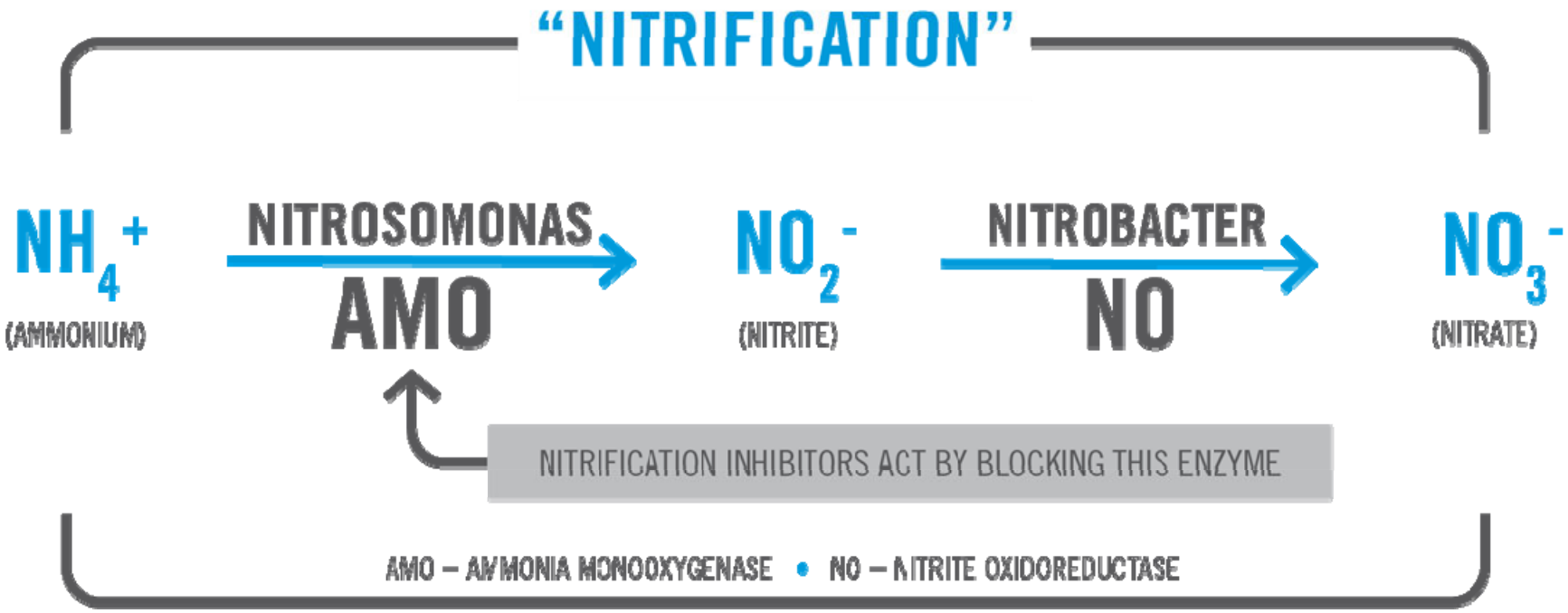


| Active Ingredient | |
|-------------------|-----|
| Pronitridine | 14% |

| Usage Rates | |
|-----------------|-----------------|
| NH ₃ | 5 gal/ton |
| UAN | 1.5-2.5 gal/ton |
| Manure | 0.5 gal/ac |

Always read and follow label instructions. CENTURO is not registered for sale or use in all states. Contact your state pesticide regulatory agency to determine if a product is registered for sale or use in your state.

Understanding Nitrification



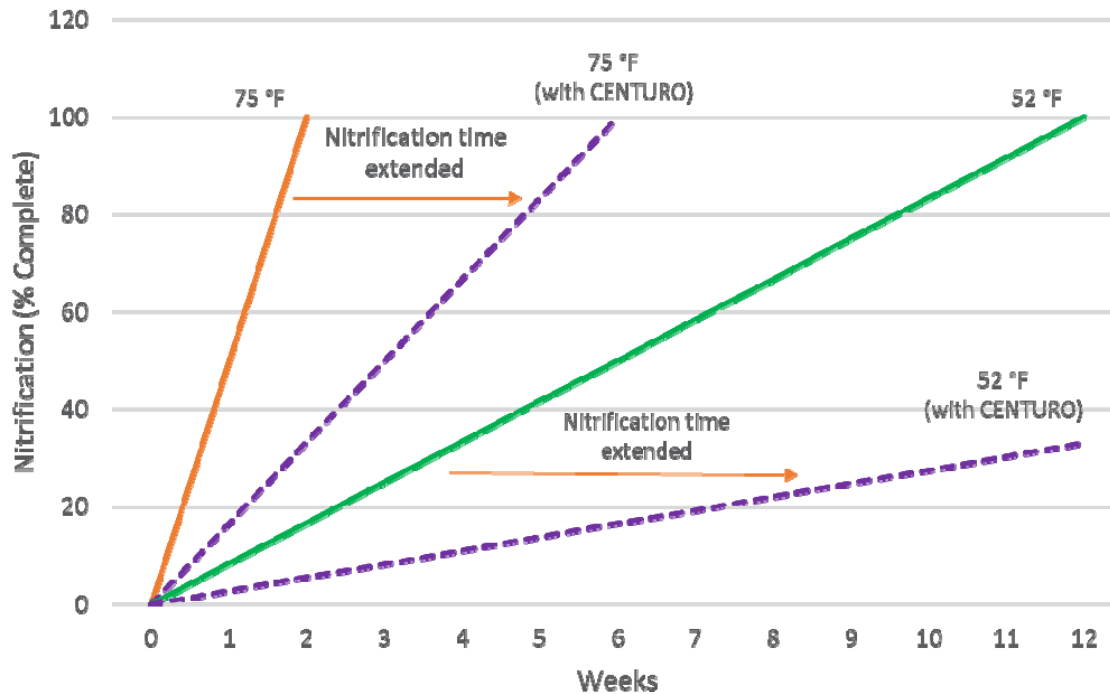
Source: Koch Agronomic Services

Always read and follow label instructions. CENTURO is not registered for sale or use in all states. Contact your state pesticide regulatory agency to determine if a product is registered for sale or use in your state.

CENTURO™ Mode of Action Benefits



Model of CENTURO's Impact on Nitrification Rates at Various Temperatures (approximated)



- CENTURO will hold the nitrogen in the ammonium state **three times** longer than untreated Ammonia**

Graph is derived from the Nutrient Management for Agronomic Crops in Nebraska (Tim Shaver, p.7) and the International Fertilizer Development Center study "Quantifying the Effects of Nitrification Inhibitors and Rates of Inhibitor Application on Nitrogen Transformations and Soil Acidification at 24°C on Greenville Loam" conducted on behalf of Koch Agronomic Services.

***Results may vary based on a number of factors, including environmental conditions.*

Always read and follow label instructions. CENTURO is not registered for sale or use in all states. Contact your state pesticide regulatory agency to determine if a product is registered for sale or use in your state.

Denitrification

Microbial process where NO_3^- is converted to N_2 gases that are lost to the atmosphere

- Denitrification proceeds rapidly when water filled pore space in soil exceeds 60%
- Denitrification is most rapid at temperatures between 80°-100° F.

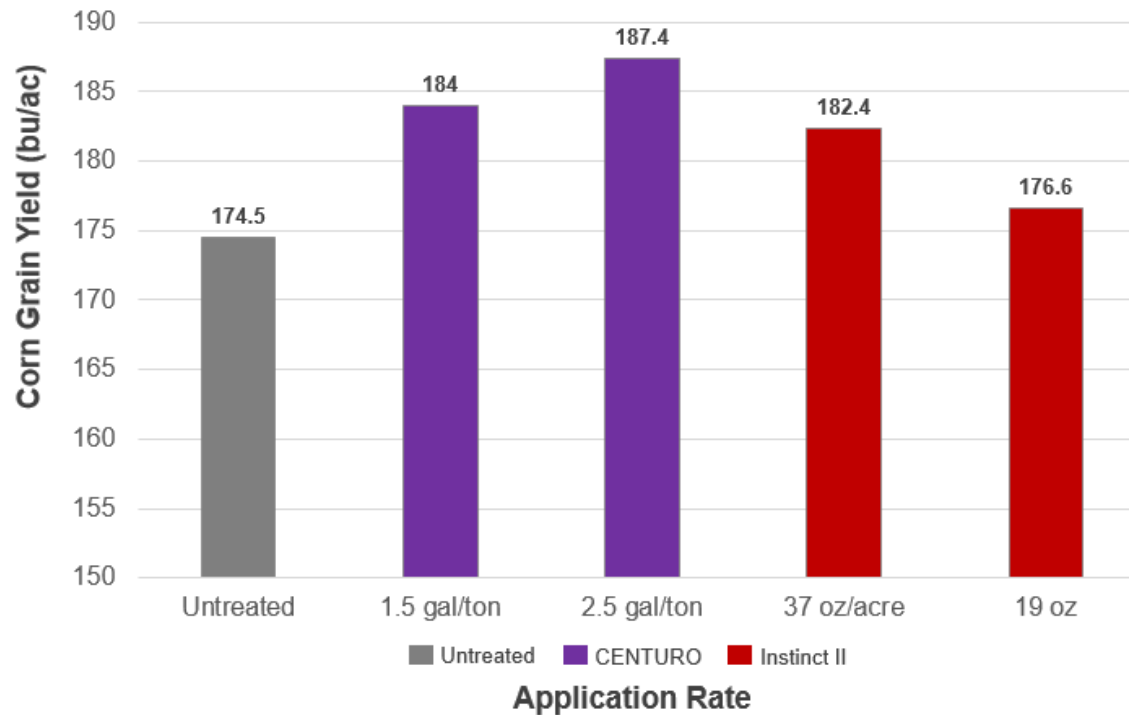
Potential loss of nitrogen via denitrification for soil temperature and time in anaerobic conditions: Nutrient Management for Agronomic Crops in Nebraska

| Time | Temperature | Nitrogen Loss |
|------|-------------|---------------|
| Days | °F | % |
| 5 | 55-60 | 10 |
| 10 | 55-60 | 25 |
| 3 | 75-80 | 60 |

- Rule of thumb: Denitrification losses range **2-3%** per day at soil temperatures from 55-65°F or **4-5%** per day if soil temperatures exceed 65°F.

Corn Usage Rate Study CENTURO™ in UAN

2019 CENTURO UAN Rate Study
Iowa, Nebraska, North Carolina



- Research indicated both the 1.5 gal/ton and 2.5 gal/ton usage rate of CENTURO showed no statistical difference.
- Additionally, both usage rates of CENTURO in UAN performed at parity to Instinct II at the labeled rate of 37 oz per acre.

The underlying data was provided by Alpha Ag Research, Real Farm Research and Tidewater Agronomics under Research Trial Financial Support Agreements with Koch Agronomic Services, LLC. Neither the universities, institutions, nor the individual researchers referenced, endorse or recommend any product or service. Improvements in yield and nutrient use efficiency may not be observed in all cases.



United States Department of Agriculture

**LOUISIANA SUPPLEMENT TO CONSERVATION
ENHANCEMENT ACTIVITY**

**CONSERVATION
STEWARDSHIP
PROGRAM**



E590130Z

Improving nutrient uptake efficiency and reducing risks to air quality - emissions of greenhouse gases (GHGs)

Additional Criteria for Louisiana

In addition to meeting the requirements outlined in the Enhancement Activity Sheet, EEF fertilizers used for this enhancement must fit in to one of the following categories:

- Ureaformaldehyde reaction products
- Isobutylidene diurea (IBDU)
- Sulfur-coated fertilizer
- Polymer-coated fertilizer
- Polymer-coated sulfur-coated fertilizers

These fertilizers are typically referred to as 'slow-release' fertilizers. LSU currently does not recommend any phosphorus-based enhanced efficiency products.

Only nitrification inhibitors or urease inhibitors, proven effective in Louisiana by Louisiana State University (LSU) or Southern University (SU) researchers, are eligible. NBPT (N-(n-butyl) thiophosphoric triamide)-based urease inhibitors (including Duromide) have been found to be effective in all agronomic systems in Louisiana. Nitrification inhibitors, with the active ingredients dicyandiamide (DCD), nitrapyrin, and pronitridine (PDF), have been found to reduce atmospheric losses in aerobic agricultural systems. Nitrification inhibitors have been found to be ineffective in flooded-basin (anaerobic) rice production systems.

For more guidance on this CSP state supplement, please contact Chris Coreil, NRCS-LA

The image features a background of a cornfield at sunset. The sky is a mix of orange, yellow, and blue, with some clouds. In the foreground, there are rows of green corn plants. The Koch logo, a stylized 'K' inside a square, is positioned to the left of the word 'KOCH'. Below the logo and name is a horizontal line, followed by the words 'AGRONOMIC SERVICES' in a sans-serif font. There are also some faint geometric shapes (triangles and lines) overlaid on the background.

KOCH™

AGRONOMIC SERVICES

The data and material contained herein are provided for informational purposes only. No warranty, express or implied, is made including, but not limited to, implied warranties of merchantability and fitness for a particular purpose, which are specifically excluded. Results may vary based on a number of factors, including environmental conditions. Before use, consult the product packaging and labeling for information regarding the product's characteristics, uses, safety, efficacy, hazards and health effects.

Neither the individual researcher referred to, nor their respective universities, endorse the products mentioned herein.

AGROTAIN® and the AGROTAIN logo, SUPERU® and the SUPERU logo, and NITAMIN® and the NITAMIN logo are trademarks of Koch Agronomic Services, LLC. All other trademarks are property of their respective owners. The Koch logo is a trademark of Koch Industries, Inc. in the United States and may be registered in certain jurisdictions. © 2016 Koch Agronomic Services, LLC.

Koch and the Koch logo are trademarks of Koch Industries, Inc. in the United States and may be registered in other countries.

© 2017 Koch Agronomic Services, LLC All rights reserved.