

# Stabilizer Products to Inhibit Volatilization

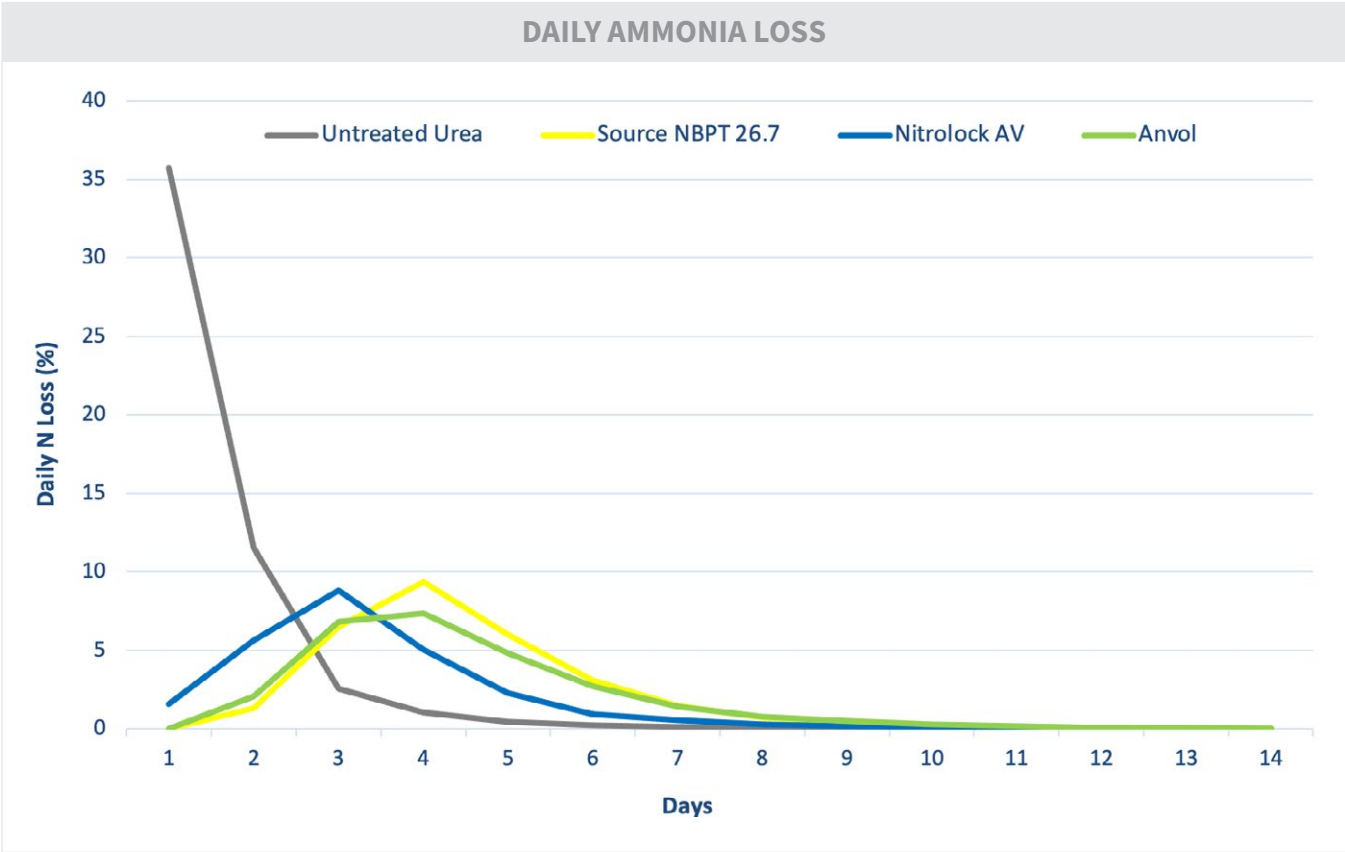
## Objective

Quantify daily and cumulative ammonia losses from urea-based N fertilizers in a controlled laboratory environment. This research was carried out by the Auburn University Crop, Soil and Environmental Sciences. 2023

## Methods

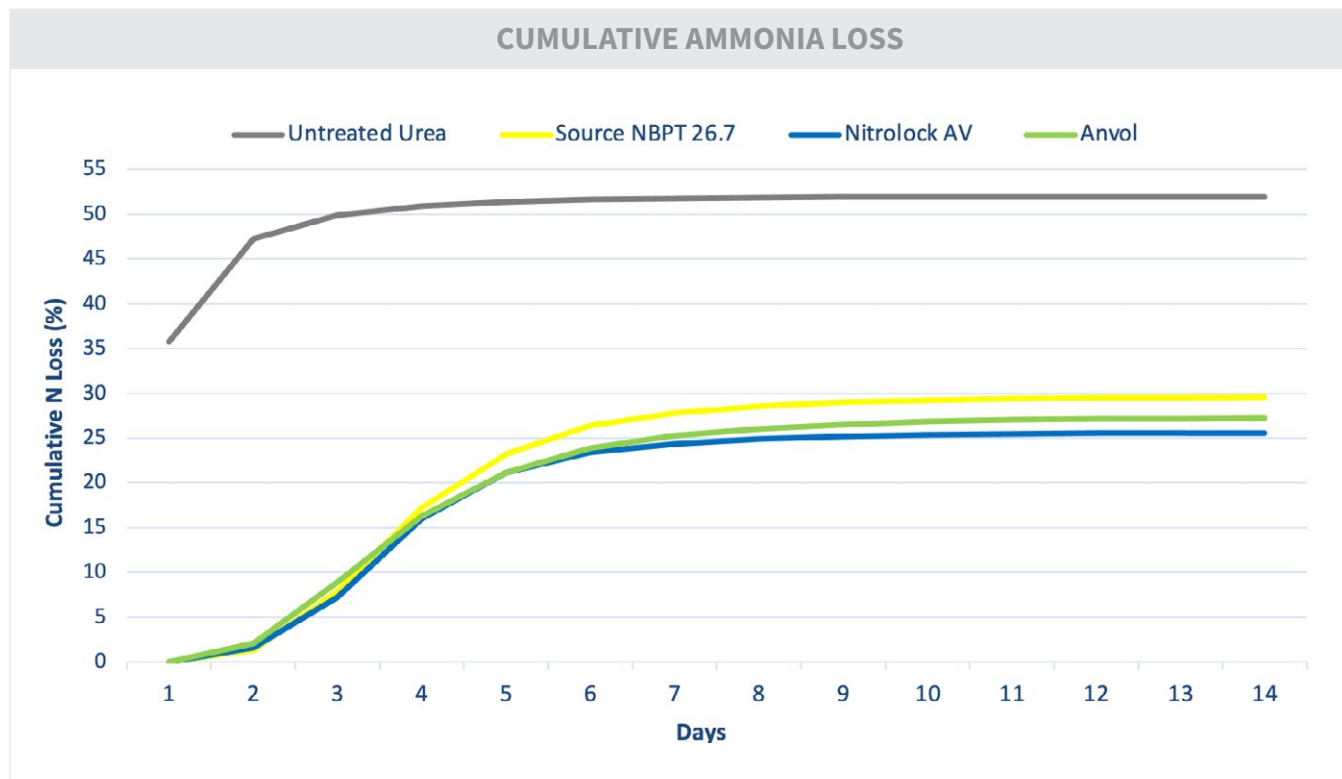
- Cabinet Temperature: 86 - 90°F
- Southeastern ultisol soil
- Randomized design, 3 replications
- Nitrogen Rate: 120 lbs N/A equivalent surface applied

Treatments		
Product	Rate	Active Ingredients
Urea (untreated)	-	-
Urea + Source NBPT 26.7	2 qts / ton	26.7% NBPT
Urea + Nitrolock® AV	2 qts / ton	10% NBPT + DCD
Urea + Anvol®	1.5 qts / ton	16% NBPT, 27% Duromide



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## Key Results

- Daily Loss: nearly all ammonia loss occurred after just 1 day. Untreated urea experienced 36% of the loss on day 1; by day 4 nearly all volatilization loss had occurred.
- Cumulative Loss: ammonia losses significantly higher for untreated urea, peaking at 52%. Curve flattens beyond 3 days; the cumulative loss from Day 3 - 14 is less than 2%.
- Nitrogen stabilizer treatments cut volatilization losses in half.
- Total cumulative ammonia-N losses from treatments were not significantly different from each other.
- Nitrolock® AV was effective and performed better than urease inhibitor only products Source NBPT 26.7 and Anvol®. In addition, Nitrolock® AV contains dicyandiamide (DCD), a nitrification inhibitor to prevent further nitrogen loss below ground from leaching and denitrification.

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