



PROFITABILITY WITH PERFORMANCE

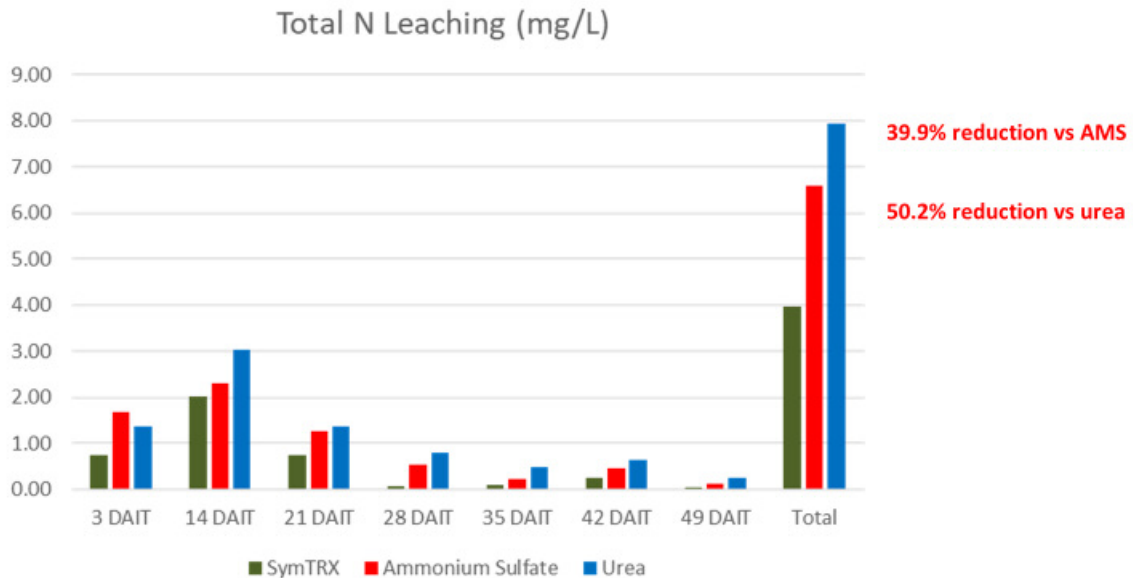
TRIAL DATA CONFIRMS ENVIRONMENTAL BENEFITS

Over recent years, several studies have been conducted to determine the effects of SymTRX on nutrient efficiency/nitrogen loss and soil health. This research continued in 2018 as Anuvia conducted a leaching study which confirmed earlier work comparing SymTRX to other nitrogen sources.

Another study, on soil health, confirmed that SymTRX feeds the soil microbiome contributing to improved soil health. SymTRX does this because of its novel nutrient delivery mechanism which provides a clean, efficient way to accelerate and improve what happens in nature as organic matter is returned to the soil.

N Leaching Loss Study:

SymTRX was compared to ammonium sulfate (AMS) and urea. SymTRX had a 39.9% reduction in leaching compared to AMS and a 50.2% reduction in leaching compared to urea.



Application Date:
August 22, 2018

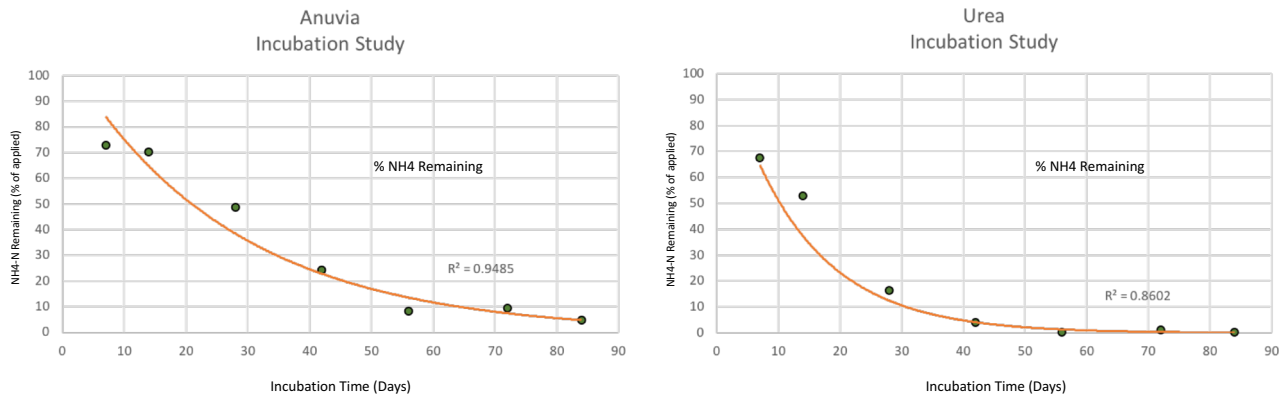
Source: Dr. Gerald Henry – University of Georgia



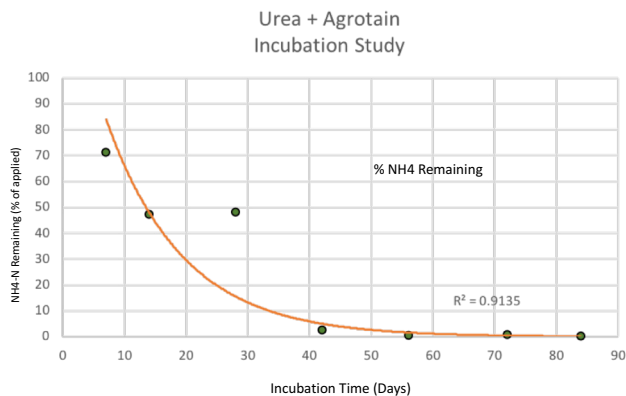
Nitrification Study:

A study was conducted by Dr. Katie Lowe from Kansas State University in 2015 to evaluate the nitrification rate of urea, urea with Agrotain and SymTRX. Slowing the rate of nitrification lowers the risk of nitrate loss from leaching. The study shows that the ammonium N converts at a much slower rate using SymTRX than the nitrogen in urea.

Conversion Rate of Ammonium Nitrogen to Nitrate Nitrogen

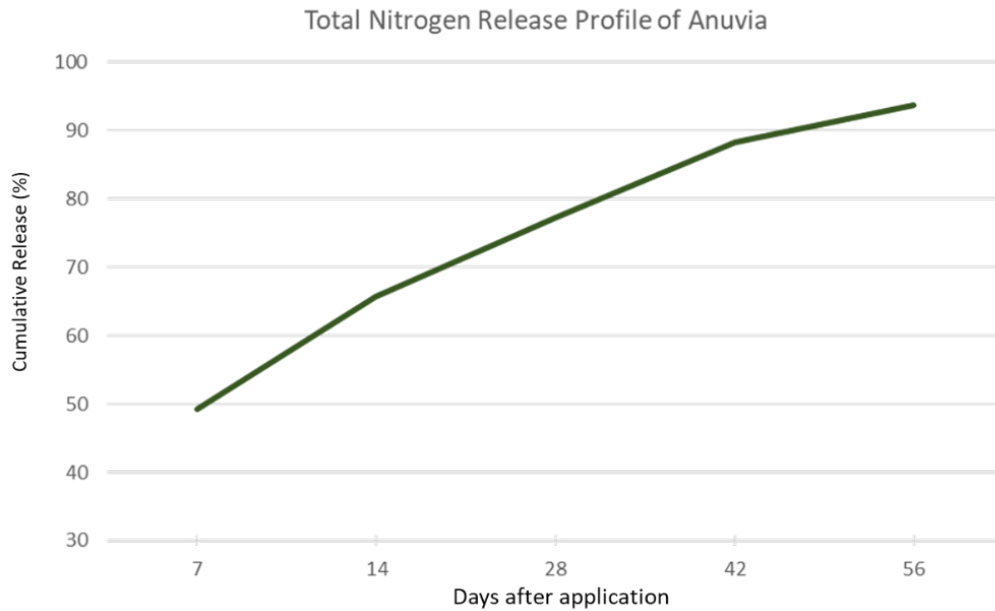


Additionally, SymTRX was compared to urea with Agrotain. The Agrotain extended the ammonium retention tail of the graph but SymTRX was still superior in keeping the nitrogen in a less leachable form for a longer period of time. This is particularly important on highly leachable soils.



Nitrogen Release Rate:

Applied Chemical Technology (ACT) conducted a soil incubation column leaching test to determine the nitrogen release pattern of the Anuvia product. Approximately 65% of the nitrogen in the Anuvia product was released in the first two weeks and continued to release at a continuous rate through eight weeks. The soil microbes in the sand/soil mix facilitate the release of the nutrients stored on the Organic MaTRX in the Anuvia product.



Soil Health - Soil Carbon (SOM) Enhancement:

Anuvia's products contain up to 16% organic matter which returns approximately 8% carbon to the soil. Thus, for every 100 lbs of SymTRX used per acre, 8 lbs of carbon per acre would be added back into the soil.

SymTRX acts in two ways — it feeds the plants by not only delivering slowly released nutrients; it also feeds the soil. Microbes working in concert with fungi and bacteria create healthier soils. Healthier soils have better soil water holding capacity and nutrient retention. In nature, organic matter in livestock manure takes many months, if not years, to decompose. During this time the material is vulnerable to nutrient loss. When Anuvia uses livestock manures as its organic material, the breakdown is accelerated: Decomposition takes place in minutes creating a clean efficient way to return purified concentrated organic matter back to the soil. Soil health and quality are improved.

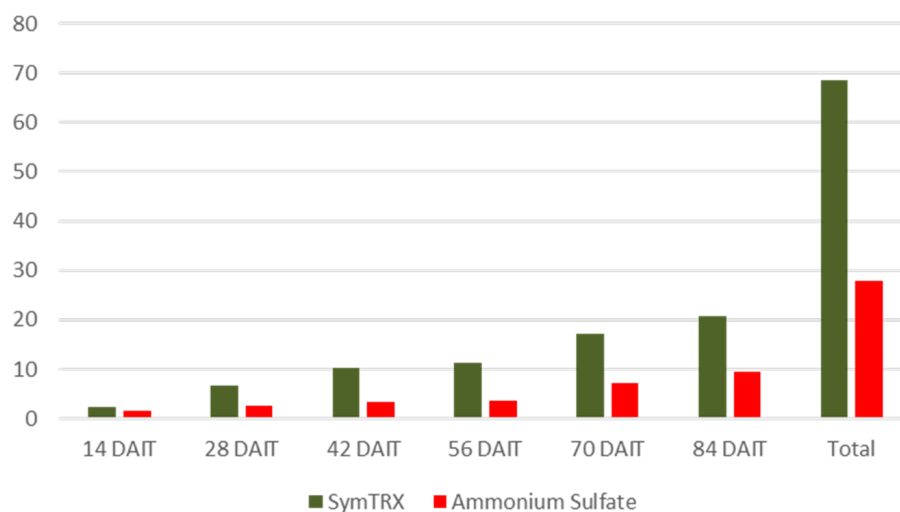
CO₂ Efflux Study:

A commonly accepted measurement of soil health is the carbon efflux test. It measures CO₂ given off by soil microbes. Higher efflux levels signify more soil microbial activity which can lead to better soil health.

University of GA conducted a carbon efflux study comparing SymTRX20S (16-1-0-20S) to ammonium sulfate. CO₂ levels increased by 246.8% compared with ammonium sulfate. This data suggests that the SymTRX is much less harmful to the microflora resulting in greater microbial activity and improved soil health. SymTRX is contributing to increased microbial colonization as evidenced by the much higher levels of CO₂ efflux compared to the control.

Soil Health Assessment

Change in Carbon Efflux (mol m⁻²s⁻¹)



246.8% increase in microbial activity

More rapid microbial recolonization

Source: Dr. Gerald Henry – University of Georgia

Root mass enhancement:

Healthier soils often allow plants to increase their root mass. Increased root mass is also associated with increased tolerance to stress conditions and improved nutrient uptake efficiency. SymTRX had 27.1% higher root mass increase than ammonium sulfate.

