Sugarcane Response to Nitrogen Stabilizers

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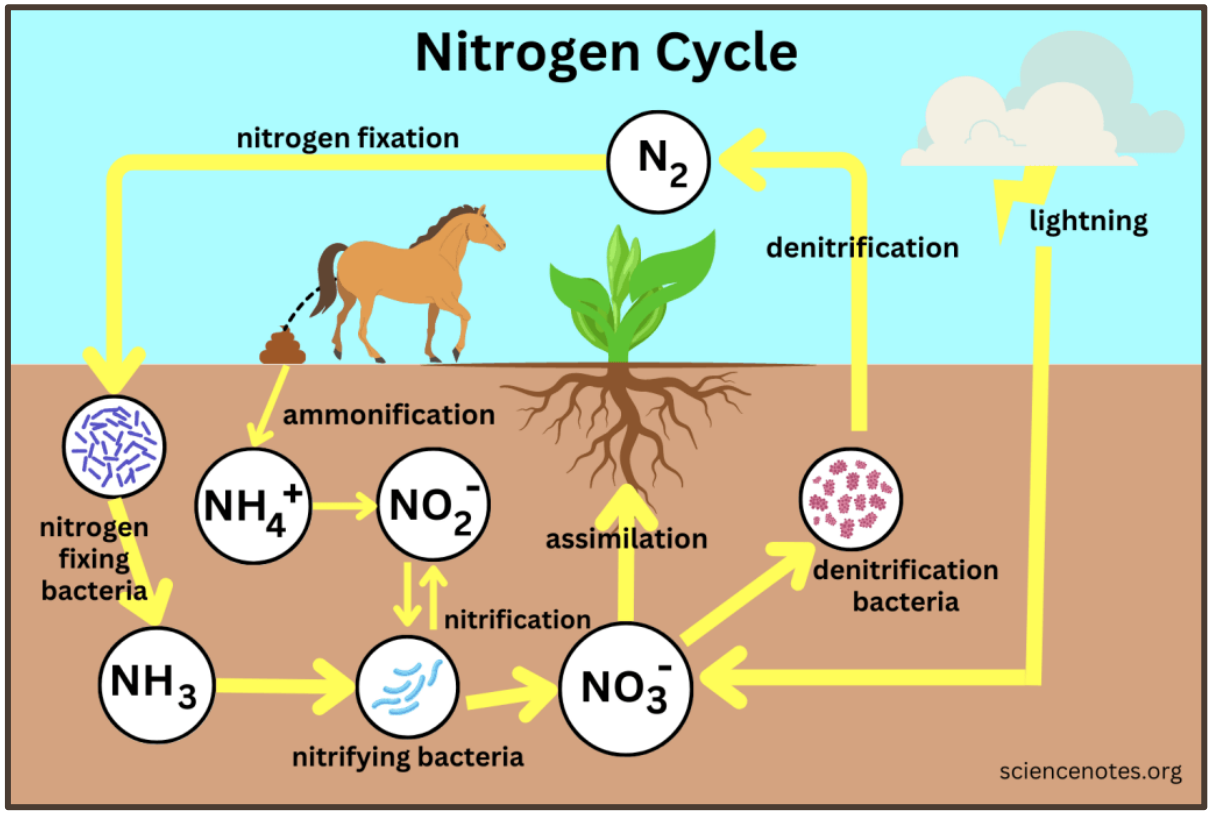
Soil Fertility

- **The 4 R's of Soil Fertility:**
  1. **Right Rate.**
  2. **Right Source.**
  3. **Right Place.**
  4. **Right Time.**

- **Increase Efficiency and Minimize Risk.**

Nitrogen in the Environment

- **Nitrogen:**
  - Applied as
    - » Urea - $(NH_2)_2CO$
    - » Ammonium - NH_4^+
    - » UAN - Combination
  - Plant available forms
    - » NO_3^- - very mobile in soil
    - » NH_4^+ - less mobile in soil
  - Nitrogen loss is our greatest challenge.
    - » NBPT – slows urea conversion
    - » DCD – slows nitrification



What's in a Ton?

1 Ton Sugarcane Contains:

- 2 lb N
- 1.2 lb P_2O_5
- 3.5 lb K_2O

Yield Level	N	P_2O_5	K_2O
25	50	30	87.5
30	60	36	105
35	70	42	122.5

Adapted from: http://www.ipni.net/article/IPNI-3296

N-Stabilizer Research Objective

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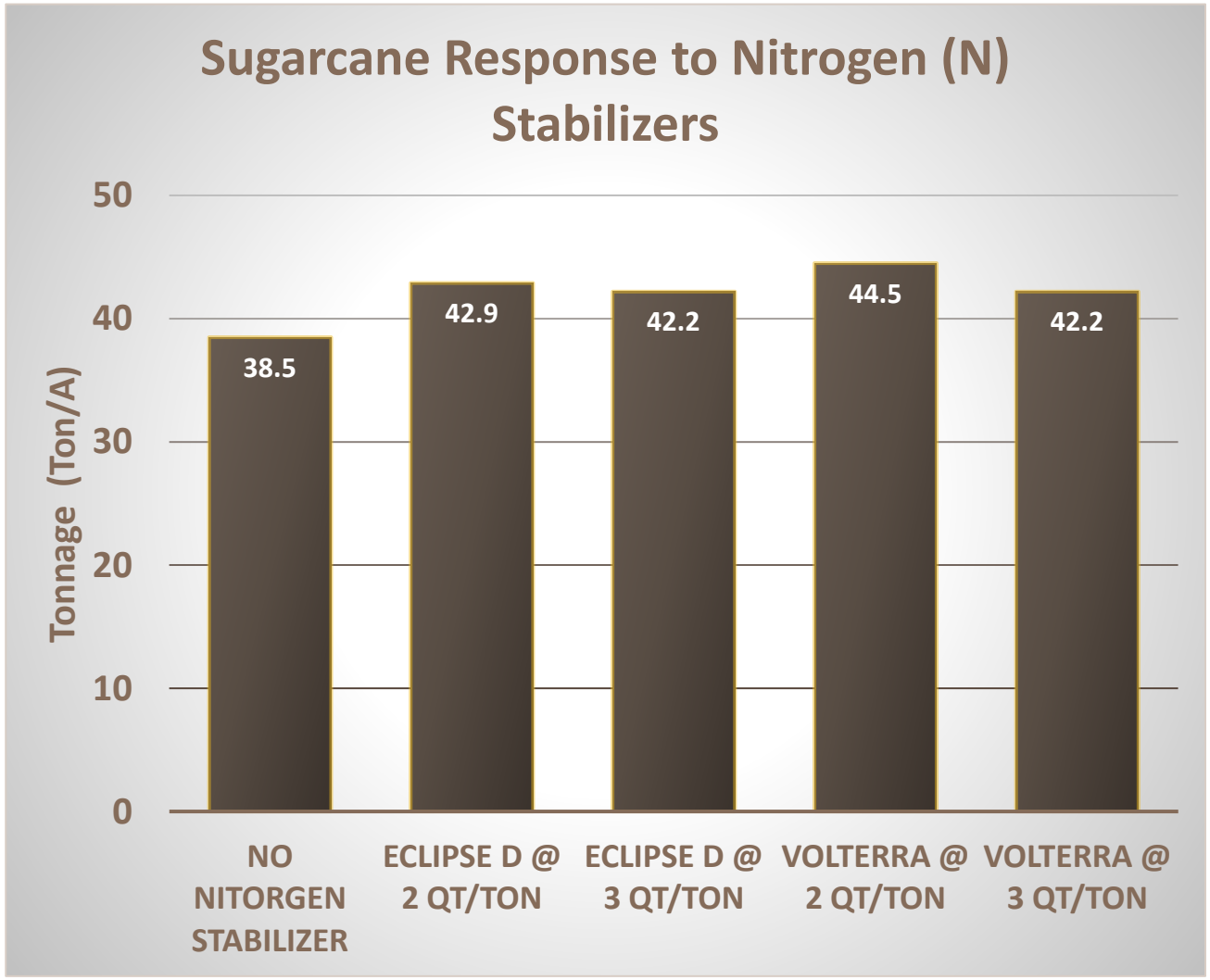
- Determine the impact of various N stabilizer products on sugarcane tonnage and sugar production.
- Evaluate rate structure of N stabilizer products on sugarcane yield.

ECLIPSE™-N

ECLIPSE™-D30

VOLTERRA™

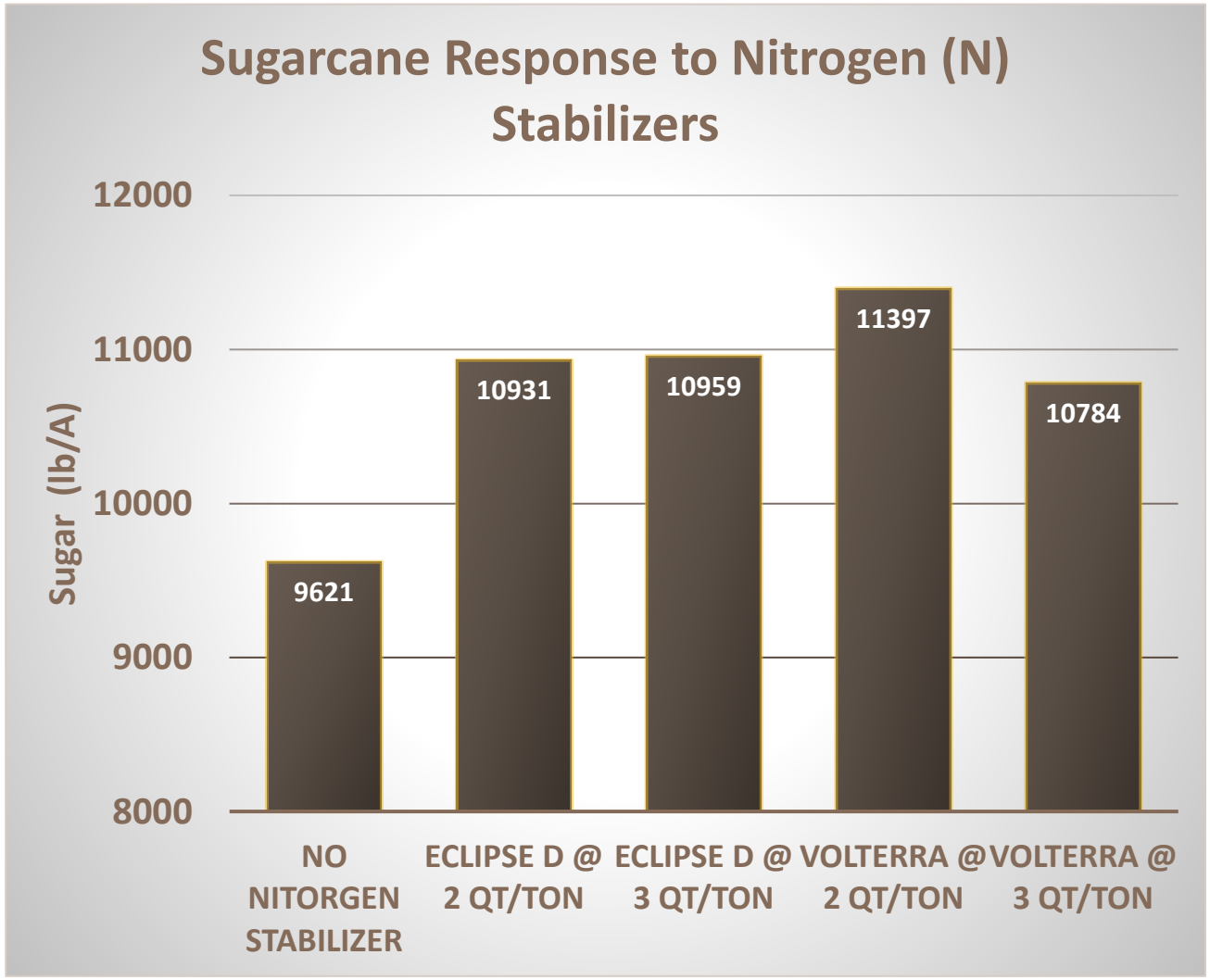
Nitrogen Stabilizer Rate Study



- Sugarcane Trial – 2023
  - Application Rate:
    - » **Treatment 1: No Nitrogen Stabilizer**
    - » **Treatment 2:** Eclipse D @ 2 qt/ Ton UAN
    - » **Treatment 3:** Eclipse D @ 3 qt/ton UAN
    - » **Treatment 4:** Volterra @ 2 qt/ton UAN
    - » **Treatment 5:** Volterra @ 3 qt/ton UAN

Data: Richard Johnson-USDA-ARS

Nitrogen Stabilizer Rate Study



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Final Thoughts and Considerations

- **Regardless of N stabilizer product and rate selected, sugarcane tonnage and sugar content was positively impacted.**
- **Volterra's (NBPT + DCD) keeps nitrogen in the plant available form longer to mitigate risk of nitrogen conversions where it can be lost due to volatilization or leached.**
- **Volterra preformed best in either study at 2 qt/ton; however, either rate improved sugarcane tonnage and sugar/A compared with nontreated UAN.**
- **Nitrogen stabilizing products such as Volterra can greatly improve crop yield and ROI.**

Questions

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