

A green John Deere tractor with two large white tanks is driving through a cornfield, spraying a fine mist. The corn plants are green and in the early stages of growth. In the background, there are trees and a building under a clear blue sky.

Assessment of Baseline Nitrous Oxide Emissions in Response to Nitrogen Fertilizer Application Rates in Corn

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Objectives

- Determine annual N₂O emissions (2-year study)
- Calculate yield-scaled N₂O emissions & emission factors
- Determine N use efficiency (ratio of N yield/applied N) & optimum N application rate for this site
- Identify key environmental conditions affecting N₂O flux

Experimental Set-up

- Clay surface soil over loam in Stockton area
- Commercial field with 1000 ft long runs
- N rates (lbs N/acre)
 - 3
 - 120
 - 180
 - 240
 - 300
- 3 replicates (three 5-foot beds per replicate). Measurement areas at varying distances from water delivery point.
- Corn planted (May 25, 2013)
- Experiment will be conducted together with N₂O mitigation study (ARB)