Can swine manure be sidedressed to corn via dragline hose?

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Abstract

Introduction and Background

Spring in the Upper Midwest can be short resulting in challenges for producers to apply manure and plant their crops in a timely manner to maximize yield. This results in a significant amount of manure applied in the fall after the crop is harvested. Fall applied manure has ample amount of time to mineralize and leave the plant available root zone before the next season’s crop can utilize the nutrients. These nutrients can end up in rivers and other fresh water bodies decreasing water quality. Sidedressing manure to growing crops could provide producers with another window of opportunity to apply their manure, maximize nutrient uptake efficiency, and increase water quality. This summer was the start of a two-year study researching the effectiveness of sidedressing slurry swine manure to corn via dragline hose compared to anhydrous ammonia and 32% UAN. This study will analyze yield, ammonia gaseous losses, plant nutrient uptake, and soil nitrate content through the soil profile throughout the growing season.

Preliminary Results

Timeline of events/methods

- May 10th: Initial soil test conducted to record nutrient levels and OM O-6 analyses
- June 5th: Pioneer 9007 AM corn was planted
- June 1st: Initial nitrogen and ammonium soil samples. Depths 0-6, 6-12, 12-24 in.
- June 5th: UAN 32% and AA treatments applied V4 growth stage
- July 1st: Third round nitrate and ammonium soil samples
- August 6th: Drone images and video taken

Additional commentary:

- Another opportunity to apply manure
  - Swine barns built in the 1990’s that have below barn manure pits have less than 12 months of manure storage now with increased swine genetics and feed. As a result, farmers must pump the pits twice a year to keep the manure pits low enough to operate the barn.
- Fall manure application can increase nutrient leaching before plant uptake while early spring application can decrease seed bed quality for the cash crop.
- Nitrogen fertilizer is a significant cost in corn production
  - Sidedressing manure to the growing crop could potentially increase plant uptake efficiency reducing synthetic N inputs saving farmers money.

Acknowledgements

Wilson Manure Lab

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