

## **It's All About Nitrogen**

Brant SCIA led a dosimeter study documenting nitrogen loss in wheat and corn during the 2023 growing season.

During the spring and summer of 2023, Brant Soil & Crop Improvement Association (SCIA) led a trial documenting nitrogen (N) loss through volatilization using the methodology outlined by Marijke Van Andel in her master's thesis *Development of a Simple and Affordable Method of Measuring Ammonia Volatilization from Land Applied Manures*. Holly Loucas, the current president of Golden Horseshoe SCIA and a member of Brant SCIA's Board, spearheaded this pilot project, adapting and tweaking the thesis methodology and testing it within various field conditions with the assistance of fellow Brant SCIA Directors participating in the data collection.

The results of this pilot dosimeter trial were surprising to the participants. In all locations there were losses of N due to volatilization. Weather and time of application, as expected, affected the amount of N that was lost. As temperatures increased, N volatility increased. If an inhibitor was applied with the N, the losses were dramatically lower at all locations. The study tested N applied to both winter wheat and corn under real field conditions and different management strategies representing growers across Brant County. Results of this study were presented at an evening BSCIA in-field event and a complete summary presented at the BSCIA AGM in January. The pilot study was a success and highlighted that we need to learn more about how and when we are losing N to volatilization and is a great learning tool to improve cropping practices to keep N losses to a minimum.

Brant SCIA will be undertaking this study during the 2024 season to further document N losses under different field and weather conditions. Several other counties in Ontario have expressed interest in participating in 2024. The study is simple, yet effective in documenting N loss through volatilization.



Example of dosimeter location configuration for late application of ammonia in corn



Positive control check in a no-till field receiving broadcast urea



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