Science Societies

Know your community: Managing denitrification in agronomic systems

By Tyler Groh, Community Leader. Morgan Davis, Community Vice-Leader

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A tile draining excess water from adjacent farmland. This tile drainage water is a large contributor of nitrate to surface water bodies, especially in the agricultural Midwest. The treatment of this tile drainage water is one of the primary focal points for the Managing Denitrification in Agronomic Systems Community.

The Managing Denitrification in Agronomic Systems (MDiAS) Community of ASA is currently comprised of 281 members of varying backgrounds, including biogeochemistry, soil science, water science, agronomy, and engineering to name a few. The members of this community are focused on solving one of the most difficult environmental challenges in agronomic systems: nitrogen loss. Nitrogen lost from agronomic systems contributes to surface water body eutrophication and public drinking water concerns. Woodchip bioreactors, saturated riparian buffers, wetlands, controlled drainage, drainage water recycling, and two-stage ditches are edge-of-field practices engineered to help remove a portion of the nitrate load leaving fields that are drained by subsurface tile (Figure 1). Our members are actively working on these systems to enhance nitrate removal through a microbial process called denitrification. Microbial denitrification reduces reactive nitrate to non-reactive dinitrogen gas (N_2). If you are interested in enhancing nitrate removal in agronomic systems through denitrification, this is the community for you.

The MDiAS Community is in its 11th year, and we are celebrating by bringing you an event-packed agenda for the 2021 International Annual Meeting in Salt Lake City, UT. The MDiAS program will start off with a poster session featuring posters with content from each of the aforementioned edge-of-field practices. These posters will be authored and presented by some of our most active members and by some of the leaders in edge-of-field nitrate removal research. The posters will also allow for anyone to catch up on how these practices work and what mysteries current research is uncovering. It is our hope that this session will provide enough background for anyone to be able to learn and exchange ideas with the invited presenters.

This poster session will be followed up immediately by a discussion panel session featuring our poster presenters. This will serve for a more relaxed networking opportunity for anyone who wants to join. We look forward to engaging in stimulating conversation centered around nitrate loss and removal in agronomic systems as we build new working relationships and strengthen old ones. These discussions will also serve to whet our appetite for new research on nitrate reduction in the MDiAS general oral session. This session will feature presentations based on submitted abstracts.

We invite everyone, regardless of research background, to attend all MDiAS-sponsored events at the 2021 Annual Meeting. We look forward to providing content for everyone's enjoyment regardless of available platform (virtual or in person).

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Back to issue

Back to home
