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The Beginning of a New Decade

The start of a new year brings out opportunity and a fresh start, but with the beginning of 2020, the new year also brings on a new decade – to all the readers of the Lakeside Newsletter, Happy New Year & New Decade! Please note that Lakeside Grain & Feed has started to adopt their winter hours of operation, 8:00 am to 4:30 pm.

Protecting your Nitrogen Investment

This fall saw many acres of wheat get into the ground – whether it was planted into unseeded acres from this past spring, or into soybean stubble in October. As spring starts to creep closer on the calendar, the time to start thinking about your nitrogen program for wheat begins now, especially since it’s a nutrient that can easily be lost. With this kind of nutrient investment, make your nitrogen work for you.

Nitrogen is mainly found in 2 forms: ammonium (NH_4^+) and nitrate (NO_3^-). Ammonium nitrogen is not readily available to your crop, as it needs to be converted to nitrate nitrogen for it to be of use to your wheat; this process of converting ammonium to nitrate nitrogen is called nitrification and occurs fairly rapidly once the ammonium nitrogen source is in the soil. However, both forms of nitrogen are susceptible to being lost before it can be of use to your wheat crop. There are three main loss pathways for nitrogen: ammonia volatilization, nitrate leaching and denitrification.

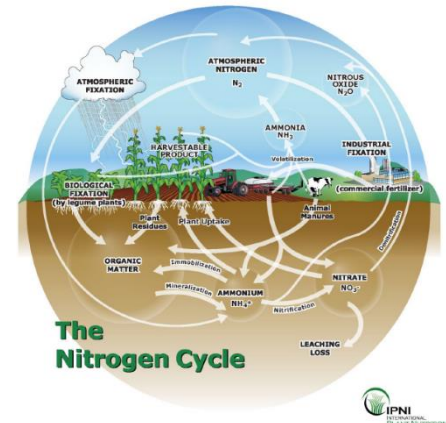


Figure 1: the Nitrogen cycle – an important tool to understand the changes, gains and losses of nitrogen.

LOSS SOURCE	AMMONIA VOLATILIZATION	NITRATE LEACHING	DENITRIFICATION
HOW N IS LOST	<ul style="list-style-type: none"> Ammonia gas is released from surface applications of nitrogen – crop cannot access nitrogen Occurs under warm temperatures and little to no rainfall when ammonia fertilizers meet crop residues. Microbes begin to breakdown nitrogen 	<ul style="list-style-type: none"> Nitrate nitrogen is very mobile in the soil and is easily leached, especially in light soil types 	<ul style="list-style-type: none"> Occurs when nitrate nitrogen is converted into nitrogen gases Often seen in soils that are heavy and poorly drained because the soil bacteria converts the nitrate nitrogen in the anaerobic soil environment Can occur in compacted soils because natural drainage is restricted
PREVENTING N LOSS	<ul style="list-style-type: none"> Agrotain – is a urease inhibitor, which prevents the microbial conversion of urea to ammonium 	<ul style="list-style-type: none"> If your crop requires high nitrogen levels, consider split applying your nitrate source fertilizer (ex. 2 passes of 28% UAN on wheat) 	<ul style="list-style-type: none"> eNtrench – using this product with your nitrogen source can protect against denitrification & leaching because it keeps nitrogen in ammonium form

Stay tuned for the February Newsletter where a deeper dive is taken into each of these loss pathways and ways to remedy them!