Source Identification and Targeting: Making Nutrient Management Work. (A08-sharpley153424-Oral)

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Abstract:

Watershed studies have shown that implementation of conservation or nutrient management strategies to reduce non-point N and P losses, must be carefully selected and targeted to be effective. Generally, N losses are more management sensitive than P, with N loss management focusing on avoiding excess N in the soil profile to minimize nitrate leaching. However, avoiding excess N is dependent on temporally variable factors such as crop N uptake, excess precipitation, and denitrification. A N-indexing framework should thus include factors for N management (N source, rate, timing), soil physical properties (water holding capacity, drainage), site hydrology (precipitation regime, irrigation, drainage), cropping system (legumes, cover crops), and farming system (livestock stocking rate) to index a site's vulnerability to N loss. For P, an index has been adopted by most states implementing a nutrient management planning strategy. Processes controlling N and P loss potential will be compared in terms of reliably identifying nutrient sources and targeting remedial efforts. The potential use of remote imaging of N stress to provide real-time N management decisions will be discussed.

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