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## CATCH THE DRIFT OF AMMONIA

**With the renewed emphasis on getting the most benefit out of fertilizers, no one wants to lose ammonia from applied N fertilizer.** Research has given us excellent management tools for keeping ammonia where it belongs...in the soil. This includes using the right form of N fertilizer, placing it in the proper place, avoid leaving urea-based fertilizers on the soil surface, and even using additives when appropriate. Farmers are very concerned with avoiding the loss of a valuable crop input.

**Ammonia is also a concern for air quality in many locations.** When emitted to the air, ammonia reacts with oxides of nitrate and sulfate in the atmosphere to form very fine particles...called particulate matter (PM) of 2.5 microns or smaller---PM 2.5. Fine airborne particles can come from a variety of sources, but they can pose a respiratory problem for some individuals. These small particles travel deep into the lungs and can irritate people with asthma or respiratory problems.

**Depending on the location, there can be multiple sources of ammonia volatilizing into the atmosphere.** Common sources of ammonia include livestock, fertilizer, soils, forest fires, industry, vehicles, oceans, humans, pets, wild animals, and waste disposal activities. Of these sources, livestock is by far the single largest source of atmospheric ammonia in the United States. There is still uncertainty about the absolute amount of ammonia released from these various sources, but new measurement techniques and assessment are improving these estimates.

**Emission of ammonia from agriculture is a growing area of concern to regulators.** There are many management practices that can be used to reduce volatile losses from fertilizer. When fertilizer is properly managed, ammonia losses from susceptible fertilizers are very small. However, to reduce ammonia emissions from animals, the solutions to reducing ammonia loss are more complex. For example, animal ammonia emissions can arise from barns, pastures, waste storage facilities, or from manure spread on crop land, each requiring different management practices.

**There are currently no regulations governing the release of ammonia from fertilizers or manures, but future policies and control measures appear likely as public awareness of this issue grows.** Use every opportunity to keep ammonia on-farm and in the soil where it can help nourish crops.

—RLM—

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Abbreviations: N = nitrogen.