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July 6, 2009

Ms. Angela Nugent, Designated Federal Official
SAB Integrated Nitrogen Committee
EPA Science Advisory Board Staff Office
Mail Code 1400F
1200 Pennsylvania Ave., NW
Washington, DC 20460

RE: June 22, 2009 DRAFT of "Reactive Nitrogen in the United States; An Analysis of Inputs, Flows, Consequences and Management Options"

Dear Ms. Nugent,

Thank you for the opportunity to submit public comment on the DRAFT report from the Integrated Nitrogen Committee (INC) entitled "Reactive Nitrogen in the United States; An Analysis of Inputs, Flows, Consequences and Management Options." The Colorado Livestock Association (CLA) represents over 650 dairy, beef, swine, and sheep producers and industry partners in Colorado.

CLA has been involved with issues of reactive nitrogen in the environment for a number of years through water quality issues and recently through air quality issues and the impacts of reactive nitrogen in Rocky Mountain National Park (RMNP). CLA has spearheaded efforts to address agriculture's contribution to wet and dry deposition of reactive nitrogen species in RMNP. The attempt to manage nitrogen deposition in RMNP and to reduce emissions of reactive nitrogen from agricultural sources is likely to be the first of many such efforts, particularly in light of the work of the EPA Science Advisory Board INC.

In 2006, CLA partnered with the Colorado Department of Public Health and Environment's Office of Environmental Integration and Sustainability to organize a group of stake holders from various sectors including agriculture, NGOs, and state and federal agencies (i.e., the National Park Service, EPA Region 8, the Colorado Department of Agriculture, the Air Pollution Control Division) to begin considering the nitrogen deposition issue and how agriculture could respond in the Park's comprehensive Nitrogen Deposition Reduction Plan. This group has continued to meet quarterly to track air quality issues at regional, state, and federal levels and to address options that agricultural industries have to reduce undesirable losses of reactive nitrogen to the environment.

Given CLA's recent and full-fledged efforts to address reactive nitrogen from agricultural operations, the DRAFT report entitled "Reactive Nitrogen in the United States; An Analysis of Inputs, Flows, Consequences and Management Options" has raised concern among CLA's members. **CLA whole-heartedly supports the INC's recognition that any proposals made to regulate or manage reactive nitrogen must "ensure adequate food, feed, fiber, and bioenergy feedstock supply while... avoiding negative impacts on the environment and human health."** Any discussion of managing reactive nitrogen must be

set in the context of recognizing its essential role in meeting the food and fiber needs the US and global populations.

That said, CLA is very concerned about the INC's recommendation to "decreas[e] the average amount of total protein consumed in developed countries" as a mechanism for controlling releases of reactive nitrogen. **CLA opposes this recommendation** based on the following concerns:

1. It is well beyond the scope of EPA's mission to control protein consumption anywhere, much less in foreign countries.
2. As an example of developed countries with more moderate protein consumption, the INC cites examples of Italy in 1963 and Japan. However, as the INC's DRAFT report notes, protein consumption in Japan more than doubled from 1963 to 1995. It is practically axiomatic that as the economic environment of a country improves, so does its consumption of meat-based protein. To attempt to reverse this trend is well beyond the scope of EPA's missions and would be an exercise in futility.
3. The INC goes on to qualify its recommendation by saying "Switching to a lower protein diet may not, however, reduce N losses if the new diet includes increased quantities of fruits, vegetables, and nuts, in addition to staple grains, beans and pulses." In other words, to reduce total nitrogen losses, people would have to consume the majority of their dietary protein from staple grains. This recommendation fails to recognize to two salient points:
 - a. The USDA, United Nations Food and Agriculture Organization, and countless other international organizations have worked for years to encourage people to increase production and consumption of meat-based protein, fruits, vegetables, nuts, beans, and pulses because these foods contain vitamins and minerals essential to a healthy, balanced diet. Among other things, the 2005 USDA report "Dietary Guidelines for Americans" recommends that people "consume a variety of foods within and among the basic food groups," and "increase daily intake of fruits and vegetables, whole grains, and nonfat or low-fat milk and milk products."
 - b. Animal agriculture can produce food for developing and developed countries on land that is unsuitable for farming staple grains. In addition to allowing economic productivity and diversity for many people groups, use of non-arable land for food production is essential to meeting the food demands of the growing world population.
4. Reducing the consumption of meat-based protein means reducing international demand for US products. According to the US Meat Export Federation, beef, pork, and lamb exports accounted for more than \$4.8 billion of trade activity in 2006. The recommendations of the INC are contrary to extensive efforts by other US governmental agencies and private businesses to increase demand for exports of US meat products.

In summary, while decreasing protein consumption in developed countries may reduce nitrogen losses, attempts to reduce consumption are well beyond the scope of EPA's mission and fail to consider the unintended economic and dietary consequences. Furthermore, given

the historical correlations between economic development and protein consumption, attempts to reverse these trends are unlikely to produce the desired results.

Regarding the INC's overall recommendations, **CLA is concerned with the lack of context for the INC's recommendations to decrease livestock-derived ammonia emissions by 30 percent.** Nitrogen inputs to agricultural systems, whether protein in animal rations or fertilizer in crop production systems, represent some of the most expensive input costs for modern producers. Therefore, producers already have economic incentives to increase nitrogen use efficiency, thereby reducing nitrogen losses. **CLA would vigorously support practices that are economically feasible and result in reduction in livestock-derived ammonia emissions** as these practices would inevitably benefit our members. However, CLA does not believe that field-tested practices that are economically viable in modern US production systems have yet been identified.

The DRAFT INC report recommends using “a combination of [best management practices] and engineered solutions” to achieve a 30 percent reduction in livestock-derived ammonia emissions. However, the report is noticeably lacking in details regarding what these practices may be. In fact, substantial resources, both through federal and state agencies as well as private businesses, have been invested to determine the efficacy of field-applied best management practices (BMPs) for reducing nitrogen emissions. Most published research investigating nitrogen volatilization from animal feeding operations and abatement of such emissions through BMPs has focused on a single stage of the animal production system with little or no consideration of the effects of such management practices on emissions from subsequent stages of the system (fig 1).

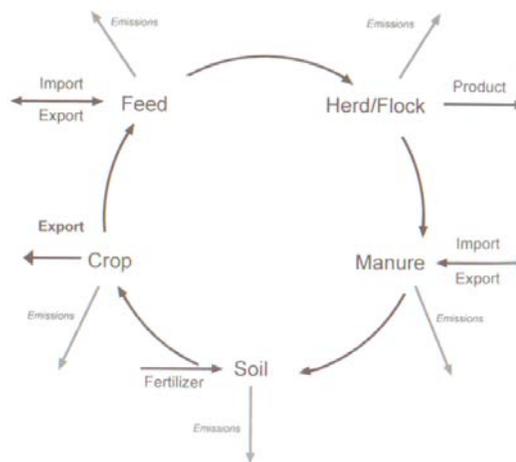


Figure 1. Schematic representation of a process-based model of emissions from an animal production system (NRC, 2003).

A more holistic understanding of the effects of management practices on overall emissions is needed so that the most effective management practices for reducing nitrogen emissions may be identified. Without using a holistic approach, resources utilized to reduce emissions from animal housing or manure storage may not result in overall reductions in emissions.

As noted by the National Research Council's Ad Hoc Committee on Air Emissions from Agricultural Feeding Operations:

“The EPA model farm approach (EPA, 2001) uses emissions from housing, manure storage, and field application and adds them together. Using this approach, one would predict that a technology to decrease emissions from manure storage (e.g. covering manure lagoons) would decrease total farm emissions by the amount that was prevented from leaving the lagoons. In reality, this ammonia would be concentrated in the lagoon liquid – increasing the emissions in the barn when flushing with lagoon liquid and in the field during land application” (NRC, 2003).

While CLA supports technologies and practices that would reduce losses of reactive nitrogen from livestock production systems through increased nitrogen use efficiency, we do not believe that the INC report has adequately addressed the difficulty of reducing emissions from the entire production system. As a result, **the recommendation to reduce livestock-derived ammonia emissions by 30 percent is not adequately contextualized and is likely to lead to proposed management strategies that are at best ineffective and at worst economically detrimental to US livestock producers.**

CLA recognizes that substantial resources are being directed towards development of process-based models and technologies that may reduce nitrogen losses from animal production and manure management systems, but these technologies and models are currently in their infancy. These facts should be clearly stated by the INC in any recommendations made by the committee.

CLA and its members are committed to preserving our natural resources while producing products that meet the demands of our customers. While CLA will vigorously support practices and technologies that reduce nitrogen leaks to the environment, the aforementioned recommendations currently contained in the DRAFT INC report entitled “Reactive Nitrogen in the United States; An Analysis of Inputs, Flows, Consequences and Management Options,” are inadequately contextualized, fail to recognize unintended consequences, and overstep EPA’s mission. CLA requests that the INC carefully consider the ramifications of its recommendations and modify its final report to reflect these concerns.

Sincerely,

William Hammerich, Chief Executive Officer
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