

Odor Management Is An Increasing Concern

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Water quality has been the main focus of environmental regulations with phosphorus gaining most of the attention. Air quality issues are next in line in the regulatory process. Therefore nitrogen is as important as phosphorus, and maybe even more so, because water and air quality issues are strongly influenced by this element. Odor problems are moving to the forefront of public concerns. It is highly probable that odor management plans will be required in the future similar to how nutrient management plans are already in place.

The efficiency of nitrogen utilization is typically low in dairy cows. For example, dairy cattle on average secrete between 25 to 35 percent of the nitrogen consumed into milk and the majority of the remaining nitrogen is excreted in manure as ammonia and organic nitrogen. Some reasons why nitrogen efficiency tends to be low in dairy cattle are because of the practice of feeding protein in excess of requirements, improper balance of the protein fractions, and protein sources of insufficient quality and potentially limiting amino acids. Reducing dietary protein in the ration has been successfully achieved without reducing animal performance and can increase nitrogen utilization.

Urea, which is a major end product of nitrogen metabolism, is mostly excreted in urine with some diffusion into milk. In manure, the conversion of urea to ammonia is influenced by urease activity, pH and temperature. Ammonia emissions can be the cause of acid rain, odor nuisances, and it can react in the atmosphere with other trace gases eventually affecting particulate matter. From a nutritionist point of view, understanding how nitrogen impacts the environment and the probability of producers facing air quality regulations should be an incentive for improving protein nutrition on the farm.

Ammonia emitted into the air can contribute to the formation of acid rain. This is an environmental concern because of its impact on the ecosystem. Changes in pH can affect the biodiversity of fish, plant and other organisms living in an aquatic environment. As lakes and streams become more acidic, the numbers and types of aquatic life can decrease. Atmospheric nitrogen depositions on or near water sources can be significant. So not only can nitrogen leach into groundwater, but it can affect surface

water by atmospheric deposition.

There is a great deal of information related to odor, but the methodology to quantify odor with specific elements and its effect on human health is lacking. Not only is there the actual odor, but there is an individual's perception of smell. Certain smells can overlap with emotions. For example, an unpleasant odor can affect a person's mood. Odor may prompt an unpleasant memory. There may be a preconceived perception about the type of facility from which the odor is emanating.

Every person has a different threshold as to what they consider an offensive smell. Another unknown is the association between odor and health. There have been reports of people experiencing nausea and depression due to odors emanating from swine facilities.

The other issue, which is more tangible, is how odor impacts the quality of life and property value. There are several practices that producers can follow to promote a positive environment.

Since the general public tend to associate a visual picture with odor, maintaining a clean, neat, aesthetically pleasing facility would go a long way to improving a person's perception. Injecting or incorporating manure shortly after application, early in the day if possible, would minimize odors. Farms near residential areas should avoid manure application on holidays and the weekend. Communicating with neighbors can go a long way in fostering better relations and minimizing complaints.

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Family and Business

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and interests required, then a remedy must be found. Potential remedies include: hiring someone outside the family with the needed skills, seeking training for a family member, or eliminating that aspect of the business.

Family businesses have the powerful advantage of dedication and motivation from family members. This advantage can help a family business to overcome adversity that might destroy a non-family enterprise. In addition, a well-run family business can be part of an extremely positive environment in which to raise a family. In order to harness these advantages and meet the long-term needs of a family and a business, effective communication and planning must be part of the equation.