



Micro-Aid® Enhances Air Quality to Promote Better Animal Health

The release of noxious gases and odors by livestock and poultry into the environment is both a challenge to growing animals and a nuisance to workers and sometimes neighbors. Ammonia is the most common gas released into the environment, while sulfur and phenol gases are the other major chemical components associated with manure odor. Good livestock producers have long recognized the importance of managing air quality within livestock production facilities in order to ensure optimal performance and great neighbor relationships.

Micro-Aid®

Micro-Aid® is an all-natural, environmentally safe additive proven to be extremely effective in controlling noxious gases (e.g., ammonia, sulfides, phenols, etc.). The environmental benefits of Micro-Aid® start with promotion of a healthier gastrointestinal tract environment. Research demonstrates that Micro-Aid® significantly reduces intestinal ammonia (Figure 1). By reducing intestinal ammonia, Micro-Aid® maintains gut health, improves the efficiency of nutrient utilization, and enhances animal performance. An improvement in dietary nutrient utilization will result in fewer undigested nutrients being excreted into the waste management system that could subsequently volatilize into odorous compounds through microbial fermentation.

Furthermore, Micro-Aid® is not absorbed by the intestinal tract; instead, it passes through the animal and is excreted along with fecal matter into the waste management system. Therefore, Micro-Aid® continues to work in a similar fashion as in the gut to enhance microbial populations, which in turn utilize undigested nutrients and prevent the formation of noxious gases such as ammonia.

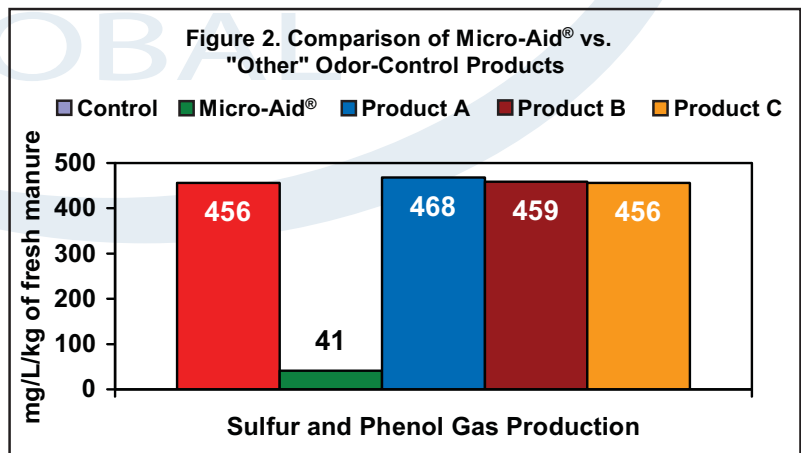
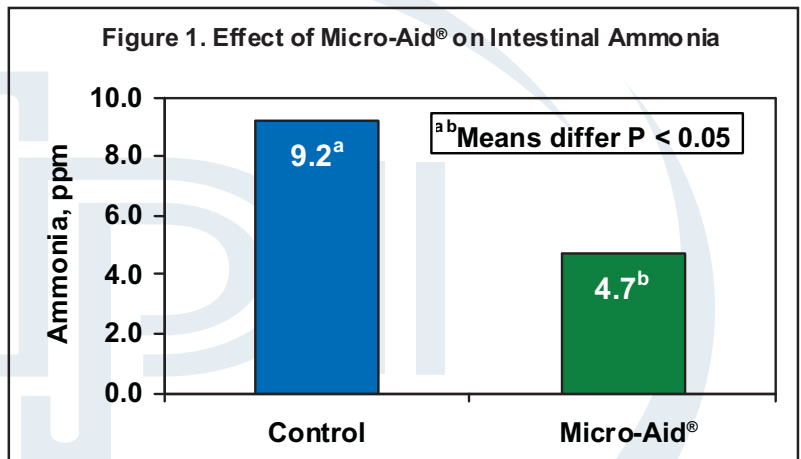


Figure 2 and Table 1 both demonstrate the effectiveness of Micro-Aid® in reducing aerial gases. In Figure 2, the inclusion of Micro-Aid® in the diet not only reduced the combined sulfur and phenol gas production in fecal



samples by 90.9% compared with pigs fed the Control diet, but also against those pigs fed products “A”, “B”, and “C”. Products “A”, “B”, and “C” are also marketed to reduce odor and improve air quality. However, it is clear from this study that Micro-Aid® is far more effective.

In summarizing fourteen experiments, notice Table 1 demonstrates that Micro-Aid® reduced aerial ammonia, on average, by over 45%. Micro-Aid® is effective in reducing aerial ammonia and other noxious gases whether it is fed, added to pits and lagoons, or sprayed over litter or bedding. It is important to note that poor air quality, especially high ammonia concentrations, is very costly in livestock production environments. Because ammonia is soluble in water, it can accumulate in moist tissues including eyes, nasal passages, and lungs. The accumulation of ammonia in moist tissues can cause a myriad of health problems, including predisposition to pneumonia and reduced immune function. Health issues resulting from poor air quality generally lead to reduced gain and efficiency of feed utilization, along with higher morbidity and mortality. In addition, poor air quality can have the same health impact on those working in livestock production environments as it does on the livestock itself.

Table 1. Summary of Research Experiments with Micro-Aid® for Reducing Ammonia

Research Experiment	Ammonia Reduction, %
Animal Industry Research Inst., Miaoli	48.0
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National Inst. of Ag. Eng., Bygholm	29.0
Purdue University	55.6
Kangweon National University	49.0
Wilmington College	41.6
University of Illinois	42.3
University of Illinois	13.0
University of Iowa	43.0
Wayne Feeds	34.0
Simonsen Laboratories, Inc.	99.0
Texas A & M University	70.0
Texas A & M University	45.0
University of Minnesota	52.0
Average Reduction in Ammonia =	46.4%

Importance of Quality Air

The quality of the air we breathe is important to all of us. We are all aware that poor air quality can result in discomfort, misery, and sometimes-serious health issues. Those living in big, congested cities are reminded of this on a frequent basis when smog rises to nearly unbearable levels. On rural farms where outside air quality is normally good, it is easier to forget the importance of managing for improved air quality. Therefore, it is important to note that the enhanced air quality attributed to the use of Micro-Aid® promotes better animal health and improved performance, reduced stress and discomfort, and improved environment for the health and welfare of animals and workers alike. In addition, because Micro-Aid® works both internally and externally when fed, air quality is improved within the production facility, as well as within the manure storage system to ensure quality air for those living in close proximity to the production system. Micro-Aid® has been repeatedly shown through extensive research to be a successful management tool to ensure high air quality for effective and profitable livestock production.

