

ENVIRONMENT

Title: Evaluation of Boric Acid and Sodium Tetraborate to Reduce Ammonia and Hydrogen Sulfide Emissions from Swine Facilities - **NPB #04-147**

Investigator: Melvin T. Yokoyama

Institution: Michigan State University

Co-Investigators: Robert von Bernuth and Susan M. Hengemuehle

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Abstract: Boric acid (BA) and sodium tetraborate (STB) were evaluated for their ability to inhibit ammonia and hydrogen sulfide emissions from swine wastewater and manure slurry in in vitro incubations. Addition of either 1% BA or STB inhibited ammonia and hydrogen sulfide emissions by almost 100 % from wastewater and manure slurries over 7 days of incubation. Concentrations of BA and STB as low as 0.0625 % were effective in treating wastewater. Other possible benefits for using boron include a reduction in malodor of the manure slurry, control of enteric pathogens and inhibition of mold growth. Boron, as commercial borax, is an economical treatment, costing about \$1.77 per kg. A quantitative risk assessment study should be conducted to evaluate the benefit to risk possibilities for all factors for using boron to treat swine manure slurry.

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For more information contact:

National Pork Board, P.O. Box 9114, Des Moines, Iowa USA

800-456-7675, **Fax:** 515-223-2646, **E-Mail:** porkboard@porkboard.org, **Web:** <http://www.porkboard.org/>