

ENVIRONMENT

Title: A Nebraska Odor Footprint Tool for Planning Pork Facilities – NPB #02-195

Investigator: Dr. Richard Koelsch

Institution: University of Nebraska

Date Received: 7/1/2004

Abstract:

Pork producers and rural communities are struggling to balance air quality issues (primarily odors) with the presence and growth of the industry. Currently the type of pork facility, odor control measures, prevailing wind direction, atmospheric conditions, and a community's tolerance to some degree of odor are largely ignored in the planning process because scientific tools that incorporate this information are lacking. Without such tools, decisions on setback distances and acceptable type and size of facilities are influenced by a range of arguments, often emotional in nature. In addition, pork producers lack tools to assist in evaluating impact on a rural community for alternative sites for a new or expanding facility.

OFFSET, a tool to assess setback distances needed for minimizing odor impact from livestock facilities, was developed by the University of Minnesota and is currently being applied as a community odor planning tool in several Minnesota counties. Cooperative efforts between the The Universities of Nebraska (UNL) and and Minnesota (UMN) are improving the state-of-the-art for odor modeling. Critical limitations for use of OFFSET in Nebraska include differences in weather conditions, lack of anaerobic lagoon data in OFFSET, and its current prediction of odor emissions without regard for wind direction. In addition, the Minnesota model does not handle odors from multiple swine barns. UNL and UMN have been working together to rectify these shortcomings and, through the use of an improved model, made possible by this NPPA grant, can now more accurately estimate the frequency of exposure to annoying levels of odor. The tasks addressed in this project included:

- integration of Nebraska weather data into an improved odor assessment tool (the Nebraska Odor Footprint tool) for pork industry and community use.
- field evaluation of odor emission rates for anaerobic lagoons, and validation in Nebraska of Minnesota emission rates for other facilities.

These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed

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/>