RESEARCH ABSTRACT

ENVIRONMENT

Title: Development of a Site-Specific Odor Impact Distance Guideline for Swine Production Systems – **NPB#98-131**

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Abstract

The determination of odor-based setbacks for swine facilities is an important issue for producers today. Sufficient setbacks prevent costly nuisance complaints and lawsuits, and excessive setbacks stifle expansion, but until now, a science-based setback estimation tool to guide and educate livestock producers and regulators did not exist. A simple-to-use, site-specific setback guideline was developed for U.S. swine production systems in this project. The guideline considers facility size, orientation and shape, wind frequency, land use, topography, building design and management, manure handling characteristics, and odor abatement effectiveness. Odor emission factors were based in part on actual odor emission measurements in commercial nursery and finishing buildings. Atmospheric dispersion models were used to enhance and validate the setback guideline. The guideline is interactive and has been published on the World Wide Web at http://danpatch.ecn.purdue.edu/~odor/. Producers, neighbors and other interested parties can access the interactive guideline on the web. The guideline is both a planning and educational tool for determining odor impact distance from swine facilities.