Local Acts

Local health departments often grapple with how best to collaborate with frustrated communities concerning potential health hazards, particularly when the likelihood of a true health hazard is unclear. This article describes how the Henry County Health Department in Ohio actively engaged in collaborative baseline data collection prior to the launch of a mega-dairy, which served to both legitimize and allay the community's concerns.

Lorna Thorpe, PhD

Director, Epidemiology and Biostatistics Program

City University of New York School of Public Health, Hunter College

PROPOSED MEGA-DAIRIES AND QUALITY-OF-LIFE CONCERNS: USING PUBLIC HEALTH PRACTICES TO ENGAGE NEIGHBORS

HANS D. SCHMALZRIED, PhD

L. FLEMING FALLON, JR., MD, DRPH

Major animal agriculture sectors in the United States are rapidly undergoing transformation and adopting large-scale production methods for their operations. Large-scale animal production operations are commonly referred to as *mega-farms* or *factory farms*. The changing nature of livestock production during the 1990s has been associated with the rapid growth of mega-farms.¹ Mega-farms achieve economies of scale through specialization, larger size, and close confinement that allows animals to be concentrated into small areas.^{2,3}

Similar to other types of mega-farm operations, large-scale dairies raise public health concerns. Mega-dairies generate large amounts of manure (e.g., a single dairy cow produces approximately 120 pounds of wet manure per day).⁴ Most manure is stored as a liquid in large earthen ponds called lagoons. The liquid manure is later spread on fields as fertilizer. Potential public health problems can occur if manure is accidentally discharged from lagoons, intentionally released from overly full lagoons, or is over-applied on fields. If any of these situations occurs, nitrogen and other contaminants can potentially pollute ground- and surface water, making water unsafe for drinking.^{5,6} Seepage from lagoons is also a source of potential groundwater contamination.⁷

Odors are one of the most common concerns associated with living near mega-dairies. A majority of odors from mega-dairies can be attributed to improper manure storage and land application procedures.⁸

Studies of people living near mega-farms have reported that in sufficient concentrations, odors may induce adverse health effects including fatigue, confusion, respiratory problems, excessive coughing, burning eyes, and runny noses.^{9–12}

The presence of large amounts of manure can attract flies that have the potential to create both nuisance and public health problems.¹³ Flies breed in mixtures of manure and decaying litter around barns.¹⁴ Several types of flies can be found at mega-dairies. Most are basically pests, while some have the potential to transmit diseases to both cows and humans.^{15,16}

Mega-dairies tend to be developed in rural areas where they often rely on wells for their water needs. They require large amounts of water for daily operations (50–55 gallons/cow/day). A lactating cow drinks about 35 gallons of water per day during the summer.¹⁷ An additional 15–20 gallons of freshwater per animal is needed for manure flushing and cow washing. Freshwater requirements of mega-dairies have the potential to stress or deplete groundwater supplies shared by neighboring residents.¹⁸

Increasing numbers of mega-dairy operations are being built. In Ohio, the number of dairy farms with 500 or more cows increased by 500%, from 10 in 1997 to 50 in 2007.¹⁹ In Ohio, the Department of Agriculture has regulatory authority over mega-dairies with herd sizes numbering more than 700 cows. New operators in Ohio generally prefer to begin operations below the regulatory threshold.

Mega-dairies are generally viewed as undesirable neighbors even before they move in. Media reports about public meetings discussing perceived problems with mega-dairy operations reveal four primary concerns: (1) a decrease in the quality of drinking water, (2) concerns about odors produced by manure, (3) fly infestation problems, and (4) declining property values.^{20–22} Fear and anger over concerns about quality-of-life issues and decreased property values are often