

CONCENTRATED ANIMAL FEEDING OPERATIONS

Human Health, Community and Environmental Impacts



MORATORIUM NOW!

“THE CURRENT STATE OF KNOWLEDGE OF COMMUNITY IMPACTS OF CAFOS WARRANTS SUPPORT FOR THE AMERICAN PUBLIC HEALTH ASSOCIATION RECOMMENDATION FOR A MORATORIUM ON ALL NEW CAFO CONSTRUCTION.”

A scientific conference and workshop was held in Iowa City, Iowa, that brought together environmental scientists from North America and Europe to address major environmental health issues associated with concentrated animal feeding operations (CAFOs) in large, industrialized livestock production facilities. Workgroup reports outline the state of the science and public health concerns relating to livestock production. Excerpts below:

WATER POLLUTION

- * Dramatic changes in livestock production have occurred over the past two decades. Traditional crop-livestock farms were balanced in that livestock manure supplied nutrients to grow the crops to feed those livestock. Farmers raised the quantity of livestock their croplands could support. Industrialized livestock production requires drawing feed from a wide area, often far away, whereas manure is distributed to a small, local land-mass resulting in soil accumulation and runoff of phosphorus, nitrogen, and other pollutants.
- * Many contaminants are present in livestock wastes, including nutrients, pathogens, veterinary pharmaceuticals, heavy metals, and naturally excreted hormones.
- * Animal wastes carry parasites, viruses and bacteria. Swine wastes carry more than 100 microbial pathogens that can cause human illness or disease.
- * Animal wastes are also rich in organics and high in biochemical oxygen-demanding materials (BOD). For example treated human sewage contains 20-60 mg BOD/L; raw sewage contains 300-400 mg BOD/L; and swine waste slurry contains 20,000-30,000 mg BOD/L.

- * Excessive phosphorus levels can contribute to algal blooms and cyanobacterial (blue-green algae) growth in surface waters used for recreation and as sources of drinking water. Acute and chronic health impacts from toxins produced by cyanobacteria can occur from exposures to both raw water and treated water.
- * High nitrate levels in water used in mixing infant formula have been associated with risk of blue-baby syndrome. High nitrate levels also create increased risk for hyperthyroidism, adverse reproductive outcomes and spontaneous abortions.
- * Limited monitoring and poor understanding of impacts of many CAFO pollutants represent a critical gap in the present ability to assess the full extent of CAFO impacts on Iowa's aquatic natural resources.

AIR POLLUTION

- * Over 70 scientific papers have been published on the adverse health effects of the confinement environment on swine producers.
- * Air quality assessments inside confinements reveal unhealthful concentrations of hydrogen sulfide, ammonia, inhalable particulate matter, and endotoxin.
- * At least 25% of confinement workers suffer from respiratory diseases including bronchitis, mucus membrane irritation, asthma-like syndrome and acute respiratory distress syndrome. More than 30% of swine workers suffer episodically from organic dust toxic syndrome.



- * Children living on farms raising swine have increased risk for asthma.
- * Neighbors of large-scale CAFOs have excessive respiratory symptoms (similar to those experienced by CAFO workers) compared to populations in low-density CAFO areas.
- * Neighbors experience increased levels of mood disorders including anxiety, depression and sleep disturbances attributable to exposures to malodorous compounds.
- * CAFO-related post-traumatic stress disorder cognitions occur among Iowans living in areas of CAFO concentration.

CAFOs – Human Health, Community and Environmental Impacts



ANTIBIOTIC RESISTANCE

- * Animal crowding, CAFO hygiene, temperature and ventilation control, and stress all have an impact on growth rate and the ability of animals to resist disease.
- * The Union of Concerned Scientists estimate that 87% of all antibiotic use in the United States is for animals, while only 13% is for human therapeutic and non-therapeutic use.
- * Most animal antibiotic use is designed to promote growth and improve feed conversion ratio.
- * Prolonged use of low-level antibiotics presents a risk of not killing the bacteria while promoting resistant genes that pass readily from one kind of bacteria to another.
- * Several recent studies clearly demonstrate the transmission of multi-drug resistant pathogens from swine to humans.
- * CAFO workers may become colonized with resistant organisms and pass them to co-workers, family or friends. Consumers of meat may become colonized with resistant organisms through mishandling of raw meat or through insufficient cooking.

INFECTIOUS DISEASES

- * Because CAFOs concentrate large numbers of animals close together, they facilitate rapid transmission and mixing of viruses.
- * Diseases can be transmitted from animals to humans via water, air, consumption or handling of meats, or by direct transmission from animals to humans.
- * Influenza transmission is a continuing concern. Whether it comes to humans from avian species or swine, or from avian species via swine, or perhaps from humans to swine, strains of high transmissibility and pathogenicity are likely to evolve and create another pandemic.

COMMUNITY DECLINE

- * The number of farms in Iowa raising hogs decreased from

64,000 in 1980 to 10,500 in 2000—an 84% decrease—while the average number of hogs per farm increased from 250 to 1,430 over this same period.

- * Economic concentration of agricultural operations tends to remove a higher percentage of money from rural communities than when the industry is dominated by smaller farm operations, which tend to circulate money within the community.
- * Studies in Iowa, Illinois, Michigan and Wisconsin demonstrated decreased tax receipts and declining local purchases with larger operations.
- * Several studies have found that property values decrease when CAFOs move into a community.
- * One of the most significant social impacts of CAFOs is the disruption of quality of life for neighboring residents. Studies suggest that CAFOs generally attract controversy and often threaten community social capital.
- * Findings consistently show that the social and economic well-being of local rural communities benefits from increasing the number of farmers, not simply increasing the volume of commodity produced.



(All photos courtesy of USDA NRCS)

- * There is little if any performance or enforcement of state manure management plans, primarily due to the lack of personnel and technical resources at state environmental agencies.
- * The legislative process in many states has often been unresponsive to citizen wishes concerning CAFOs.
- * Fears of the communities and neighbors concerning potential adverse human health effects have increased, leading to the formation of citizen action groups in many locales.
- * Neighbors of CAFOs are interested in preventing loss of property value, loss of their homes and land, forced changes in their lifestyle, adverse changes in their communities, and threats to their health.

Excerpts from “Environmental Health Impacts of Concentrated Animal Feeding Operations: Anticipating Hazards—Searching for Solutions”, P.S. Thorne, College of Public Health, The University of Iowa, Iowa City, IA USA. Supported by grant from the Environmental Health Sciences Research Center at The University of Iowa and the National Institute of Environmental Health Sciences.