

University of Tennessee Report: No Economic Advantage to Industrialized Pork Production

In October 2008, researchers from the Agricultural Policy Analysis Center of the University of Tennessee released a report¹ commissioned by the Pew Commission on Industrial Farm Animal Production, a panel formed to conduct a comprehensive, fact-based examination of key aspects of the farm animal industry.² The report found that the current industrial method of raising pigs for food carries no economic advantage over more natural pig farming.³ The researchers determined that when the costs to society and communities are taken into account – particularly the costs of waste treatment - industrial animal production actually carries a higher price tag.

The industrialized production of pork consists of large, intensely crowded, confined populations of swine, the regular use of antibiotics in feed to promote rapid weight gain, and the storage of untreated hog waste in underground pits or surface lagoons until such time as it is spread on surrounding fields. Farmers began raising pigs and other food animals in this way after World War II, when animal farming was modeled after the successful standardized production techniques emerging in the industrial sector. As industrial production has grown since then to dominate the food animal sector, gradually eliminating small family farm livestock production, proponents have largely justified the change for economic reasons: they argue that larger confinement operations (e.g., over 5,000 hogs) that regularly use antibiotics can produce more animals of predictable weight and health more quickly and cheaply than in natural operations.

Photos: Industrial swine housing, farrowing crate, and waste lagoon



(Source: USDA)



(Source: Pew Commission on Industrial Farm Animal Production)



(Source: Soil-Science.info)

While very small, traditional pasture hog farming is more costly per hundredweight⁴ than an industrial system, some alternative methods are competitive. One emerging substitute to industrial-scale farming is the hoop barn – a system designed to allow animals to eat, grow, socialize, and breed in a more natural environment. Hoop barn systems consist of a series of tarp-covered open-ended buildings each typically housing 75 to 250 hogs living on cornstalk or other crop residue bedding. An Iowa State University experimental hoop barn initiative revealed, “On an annual basis, there are no major differences in feed intake, growth rate, feed efficiency and mortality between pigs in hoop structures and pigs in confinement systems,” and, “The annual overall cost of pork production for finishing pigs is similar between hoop and confinement systems.”⁵

Photos: Swine hoop barns



(Source: Land Stewardship Project)



(Source: Rolf Hagberg/AURI)



(Source: USDA)

Similarly, the University of Tennessee report cites data showing that hoop barn swine production costs only \$0.26 more per hundredweight than a confinement system, including all construction, maintenance, and operating costs. The calculation does not include potential benefits for farmers from raising meat that can be marketed at higher prices as “natural” or “humanely reared.”

Industrial animal farming operations are able to keep costs relatively low partly because they are not required to treat the millions of pounds of animal waste generated each year. Though confinement operations must apply for a water pollution permit,⁶ interpretation of the requirement varies by state and often goes unenforced. However, waste – and the nutrients, toxins, bacteria, and antibiotics and other drug residues contained in it – inevitably ends up in surface and groundwater following rains or due to leaking manure pits or inappropriate land application. This waste reduces neighboring land values and puts community health at risk due to antibiotic resistance and disease. (See also Pew fact sheet, “Antibiotic Resistant Bacteria in Animals and Unnecessary Human Health Risk.”)

When the cost of proper waste treatment is considered, the University of Tennessee team reports that industrial hog farms become more expensive than virtually all other kinds of operations, such as \$12.16 more per hundredweight than hoop systems. This does not account for the added healthcare cost of antibiotic resistance resulting from regular use of growth-promoting drugs on industrial hog farms, which, if taken into account, would likely raise the cost of those methods even higher.⁷

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¹ Schaffer, H. D., Koonnamthamdee, P., & Ray, D. E. (2008). *Economics of Industrial Farm Animal Production*. Institute of Agriculture, Agricultural Policy Analysis Center, Department of Agricultural Economics, University of Tennessee. Washington, D.C.: Pew Commission on Industrial Farm Animal Production. Available at: <http://www.ncifap.org/reports/index.html>.

² For more information about the Pew Commission, please go to <http://www.ncifap.org>.

³ The definition of “natural” animal farming can vary, but often entails the use of vegetarian feed, no growth-promoting antibiotics or hormones, and less confined living and breeding space.

⁴ “Hundredweight” (cwt) is an English term commonly used in the sale of livestock, representing about 112 pounds. In other words, a 250-pound pig would measure 2.23 cwt.

⁵ Iowa State University, “A Research Initiative – Hoop Barn Swine Production,” available at: <http://www.leopold.iastate.edu/pubs/other/files/hoopsheet.pdf>.

⁶ See the National Pollution Discharge Elimination System (NPDES), at <http://cfpub.epa.gov/npdes/>.

⁷ Harrison, P. F. and J. Lederberg, eds. (1998). *Antimicrobial Resistance: Issues and Options*. Institute of Medicine. Washington: National Academy Press.