



Managing Swine Production to Enhance Animal Welfare

Who cares and why?

Pork production systems continue to evolve in the U.S. and globally. Development and evaluation of new technologies and management strategies is a critical step; however, evaluations by commercial companies may be biased, lack proper expertise or equipment, and/or apply to a limited number of farmers in a specific region of the country. Furthermore, evaluation results often do not become public information. Thus, it is important for scientists across the country with technical and research training in nutrition, facility design, economics, animal behavior, and genetics to come together to coordinate research on pork production issues and evaluate possible technological and management solutions. This research helps improve pork production efficiency and pig welfare (including animal feeding, handling, and housing) throughout the U.S., thereby enabling opportunities for economic gain and greater societal responsibility in pork production.

This project improved the production efficiency and social acceptability of modern pork production practices throughout the U.S. by researching and evaluating methods and technologies for handling, feeding, and housing pigs.



NCERA-89 scientists spearheaded the development of pig farm housing and space standards that promote healthy animals and normal behavior and are cost-effective. Research findings have been implemented across the U.S. and globally and are supported by many animal welfare organizations and pork producer associations. Photo courtesy of the USDA-ARS.

What has the project done so far?

Over the past five years, the group has conducted research on proper feeding management of reproducing sows; temperature management protocols to reduce the use of heating fuels and production of greenhouse gases from swine barns; housing methods to improve the economic and biological performance of pigs while maintaining high pig welfare; strategies for sorting pigs by weight to increase market value; and use of by-product feed ingredients in the production of safe, wholesome pork products. Based on this research, the committee has delivered educational programs for pork producers (SowBridge and PorkBridge) throughout North America.



Proper feeding management of sows is a key part of pork production. Producers want to get the most value for every dollar they spend on sow feed and also improve the welfare of their sows, so that they can increase the overall efficiency and sustainability of their operations. Photo courtesy of the USDA-ARS.

Impact Statements

Provided unbiased evaluation of new technologies for all pork producers.

Designed and delivered educational materials that allowed pork producers to hear the latest, cutting-edge technologies for pork production without leaving their pork operations. These technologies have been implemented on farms across the U.S. and have improved the efficiency and social acceptance of pork production.

Researched sow feeding management, demonstrating that producers can divert labor away from complicated feeding regimens to other duties related to sow care, saving time and money while promoting animal welfare.

Reduced fossil fuel consumption, resulting in savings of \$1.55 per nursery pig in heating fuel costs and \$0.05 per nursery pig in electrical costs. In this time of high energy prices, pork producers have received the results of this research with great enthusiasm.

Improved housing methods for pigs, providing greater flexibility in managing pig flow through barns and reducing labor requirements. The committee's approach to managing pig flow has become the norm in commercial pork production.

Showed pork producers how to effectively use by-product feeds, giving producers reasonably priced feed choices during tough economic times. Many of these feeds are the by-products of biofuel production. Turning low value production wastes into high value feed ingredients contributes substantially to the long-term sustainability of the biofuel and agricultural industries.

What research is needed?

Continued research and evaluation of management practices and technologies, with increased focus on the welfare, behavioral, and physiological needs of pigs, will ensure that the U.S. has a safe, affordable, and sustainable meat supply to satisfy increasingly discriminating consumer demands.

Want to know more?

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Edited and designed by Sara Delheimer



Additional research to better understand pig growth and maturation will help scientists and farmers identify new ways to raise pigs of uniform size and ultimately increase profits throughout the pork production chain. Photo by George Chriss/Penn State University.