

NCERA219: Swine Production Management to Enhance Animal Welfare

(Title of Project)

(Project #)

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Impact Nugget: (This section is a **one-sentence abstract** of the IMPACT reported in detail in the impact section of the impact statement.)

U.S. swine producers have gained access to and implemented new technologies and management practices as a direct result of NCERA-219 research and outreach education efforts; thereby improving revenue and or reducing cost of production and addressing the welfare needs of the pigs, while considering consumer expectations of food animal production.

Issue: (Who Cares and Why?)

Faced with increased public interest in why and how food animals are raised and handled in food animal industries, the NCERA participants have collaborated to conduct cutting edge research and associated extension education projects to address industry needs for economically viable, animal welfare compliant, and consumer acceptable options in swine production systems.

What has the project done so far?

Research findings have supported improvements in swine management and welfare including; supplemental heat options in farrowing; space allocation in nursery and finishing stages; modification of pre- and post-farrowing feeding practices; reducing nocturnal housing temperature for weaned pigs to reduce energy costs and carbon footprint while maintaining productivity and welfare; assessing the impact of out-of-feed events in swine finishers; addressing pig sorting, stocking, and mixing protocols to optimize marketing options; and assessing the influence of water flow to pigs.

Impact Statements:

- Reduced nocturnal temperature research, conducted at 4 stations, demonstrated that decreasing temp 15 °F from 1900 to 0700 h each day beginning 4 days after arrival in the nursery can save fossil fuel costs without an adverse impact on pig performance. Collective data indicate a 29% reduction in use of heating fuel and electricity, saving \$1.71 per pig. Assuming 20 million pigs are managed in this manner, annually projected savings of ~ \$34,000,000 and a reduction of 140,720,000 kg CO₂ equivalents.
 - Extension Pork Education programs in Michigan for 2013 were focused on the 'Transition Pig'. Extension educators have used NCERA219 research findings in presentations, with additional local support for our findings by a commercial feed manufacturer. Attending producers will be surveyed to determine the changes in their operation in order to measure short-term and long-term impact.
- SowBridge, PorkBridge, National Pork Board Extension Educators, Ventilation workshops and annual state-based outreach education programs represent the extension of collaboration among NCERA219 committee through monthly or every other month distance education (phone and internet) venues delivered directly to U.S. and International swine producers.
 - Program growth has occurred and now includes eleven collaborating institutions (including NCERA219 members) and reaches producers from many US states. Topics presented include data from NCERA 219 cooperative and individual member programs. Financial impact depends on producer technology adoption rate.

- SowBridge programs have reached 1077 on-farm employees and managers representing approximately 19% of the US swine-breeding herd as well as multiple international groups.
- The collaborative research initiatives of NCERA219 have secured extramural funding from commodity groups and funding organizations. Grants directly support multi-state research projects.
 - Expansions of research objectives have led to USDA NIFA grant initiatives by four stations.
 - \$30,000 - Minnesota Pork Board – Reduced Nocturnal Temperature Study
 - \$20,000 Ohio Pork Producers Council and affiliated industry partners – Ohio Ventilation Trailer Program
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 - \$30,000 – Iowa Pork Producers Association, South Dakota Pork Producers Council, Nebraska Pork Producers Association, Minnesota Pork Board – Multi-state Ventilation Trailer Program
 - 32 workshops, 600 Producers and Veterinarians, 450,000 sows and 44 million pigs influenced
 - \$7500 – National Pork Board – Diet ingredient switch project.

Research Needs for Future Impacts:

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.

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