Awards issued prior to January 20, 2025, were funded under previous Administrations and may not reflect the priorities and policies of the current Administration.

United States Department of Agriculture
Project Initiation

Project Data for Accession Number 1031555

Project Title

Repair/Replacement Of The Ventilation System At The University Of Kentucky Swine Research Unit

Project Details

Sponsoring Institution National Institute of Food and Agriculture	**Project Status** COMPLETE
Funding Source NIFA Non Formula	**Grant Year** 2023
Grant No. 2023-77046-41257	**Cumulative Award Amt.** $75,000.00
Proposal No. 2023-07046	**Multistate No.** (N/A)
Project Start Date Sep 15, 2023	**Project End Date** Apr 14, 2026
Program Code [RFAP] Research Facilities Act Program	

Project Director

Lindemann, M.

Recipient Organization

UNIVERSITY OF KENTUCKY RESEARCH FOUNDATION, THE
500 S LIMESTONE
LEXINGTON, KENTUCKY 405260001

Performing Department

(N/A)

Non Technical Summary

Research activities in the area of swine nutrition and management at UK are now hampered by an aging ventilation system that cannot be restored to proper functionality. The loss of ventilation capabilities hinders proper animal wellbeing during periods of the year, thus reducing the capacity to contribute to the research related to providing an adequate, nutritious, and safe supply of food for human nutritional demand. It also compromises the plans for the expanded food products facilities which will develop new uses and new products for pork at the research farm where the swine research unit is located. Upgrading the ventilation system to a system that the industry-standard will allow the continuance of this unique herd, which is free of diseases that are routinely vaccinated for in every other herd in the country. The performance of these pigs is exceptional and allows research to be conducted that is strictly related to the biology of the pig without the interaction with disease. The use of industry-standard equipment with industry-standard installation will make long-term upkeep and maintenance easy and affordable. The end result of this activity

will be a functional ventilation system that is automatically controlled and is constructed with the minimal amount of cost, thus enabling the continued research output of an extremely productive swine research group.

Animal Health Component

Animal Health Component: 0%

Research Effort Categories

Basic	0%
Applied	100%
Developmental	0%

Classification

Knowledge Area (KA)	Subject of Investigation (SOI)	Field of Science (FOS)	Percent
401	3510	3100	100%

Knowledge Area

[401] Structures, Facilities, and General Purpose Farm Supplies

Subject Of Investigation

[3510] Swine, live animal

Field Of Science

[3100] Management

Keywords

swine, ventilation, controllers, fans

Goals / Objectives

The goal of this renovation project activity will be a functional ventilation system that is automatically controlled that mimics current industry systems and is constructed with the minimal amount of cost. It will allow the continuance of the excellent productivity of the swine research group at UK and it will seamlessly integrate with plans for further development of facilities at the C. Oran Little Research Farm that incorporate aspects of consumer product development and workfornce development related to animal agriculture. The restored ventilation capabilites will enhance industry support of research projects and will facilitate continuance of the swine herd that has unique health aspects.

Project Methods

A review of the swine unit and the ventilation issue has already been conducted by the former chair of the Department of Animal and Food Sciences and former swine extension specialist who had previously advised many producers in Kentucky about ventilation issues, as well as by another former swine extension specialist in Kentucky who went to industry and worked as a nutrition and management consultant for a major swine feed company and who also advised

swine producers nationally about ventilation issues. A third individual from the Biosystems and Agricultural Engineering (BAE) Department was consulted about aspects of what was recommended by the two swine extension personnel. All recommended reversing the air flow by pulling the air from the attic and exhausting it through the end walls. The BAE specialist was especially requested to comment on the needs/changes within the attic of the rooms relative to air flow and air temperature. Following these assessments, the leading swine equipment supplier in the U. S., Hog Slats Inc., was contacted for them to visit the swine unit for comments. Their representative concurred about reversing the airflow and they supplied the quote for equipment that is a part of this project. They also are involved in selecting a construction group familiar with swine units in general and with their equipment specifically. That construction group will be visiting the swine unit in September 2023. The installation of the fans and the linking of those fans to an automatic controller that is located in the central alleyway of each building is the first phase of the project. The second phase of the project involves work in the attic of each room that will allow the appropriate air flow of tempered air. This involves the construction of plenums and their insulation. The BAE specialist will be involved in designing and verifying appropriate construction and installation of the plenums. The construction and installation will be conducted by UK personnel within the College of Agriculture, Food, and Environment.