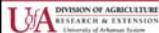


## Exploring Interactions between Agricultural Decisions and Greenhouse Gas Emissions using Swine Production

This is a NIFA funded project (Proposal # 2010-04269)

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## Project Background

- Many of today's high school students have little insight into the basic day-to-day operational decisions and challenges faced by Agricultural producers.
  - A need for dynamic ag-centric educational material.
- This project presents a dynamic lab activity, focusing on:
  - Arkansas swine production systems
  - Greenhouse Gas emissions.
- Developed as part of NIFA project
  - Title: "Integrated Resource Management Tool to Mitigate the Carbon Footprint of Swine Produced in the U.S"
  - Proposal # 2010-04269



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## Learning Objectives

1. Educate students within the state of Arkansas about the various management systems intrinsic to swine production operations within their state.
2. Provide students insight into the management obstacles that Arkansas swine producers are challenged with through balancing Carbon footprints, economic resources, natural resources, and legal compliance with production profitability



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### Exploring Interactions between Agricultural Decisions and Greenhouse Gas Emissions using Swine Production

<p><b>Part 1</b></p> <ul style="list-style-type: none"> <li>• Introductory level of information             <ul style="list-style-type: none"> <li>– Swine production practices common to Arkansas</li> <li>– Basic Swine Production concepts</li> </ul> </li> <li>• Activity Focus             <ul style="list-style-type: none"> <li>– Information comprehension</li> </ul> </li> <li>• Implementation flexibility             <ul style="list-style-type: none"> <li>– Stand-alone activity</li> <li>– Prep-activity for Part 2</li> </ul> </li> <li>• Intended Audience             <ul style="list-style-type: none"> <li>– High school</li> </ul> </li> </ul>	<p><b>Part 2</b></p> <ul style="list-style-type: none"> <li>• Higher level of complexity             <ul style="list-style-type: none"> <li>– Extensive resource material</li> </ul> </li> <li>• Activity Focus             <ul style="list-style-type: none"> <li>– Information application</li> <li>– Critical thinking</li> <li>– Problem solving</li> </ul> </li> <li>• Scenario based decision making</li> <li>• Intended Audience             <ul style="list-style-type: none"> <li>– High-school                 <ul style="list-style-type: none"> <li>• Advanced placement</li> </ul> </li> </ul> </li> </ul>
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### Delivery Mechanisms

- Online Delivery
  - Housed on UACES servers
  - Linked to from LPELC site
    - Downloadable pdf files
- Arkansas Farm Bureau
  - The Ag-in-the-Classroom program is an effort to re-acquaint those youth with their agrarian roots and to help them know the origins of their food and clothing through agriculture-related **Arkansas curriculum frameworks**
  - Incorporated into the existing curriculum within Arkansas classrooms
    - Activity content satisfies various Arkansas Department of Education Curriculum Frameworks
      - Science, English Language Proficiency ...etc.




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### Overview of Part 1

- Interactive lab designed to introduce students to the basic concepts of swine production
  - Emphasizes information comprehension
- Compilation of swine production reference materials
  - Definitions
    - Layman terminology
  - Summaries of common Arkansas swine management strategies
  - Basics of common greenhouse gasses (CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>)
    - As they relate to the scope of this activity
- The activity serves as both an introduction to basic ideas and practices native to swine production and GHGs, as well as a guide which lays the foundation for the students completion of Part 2




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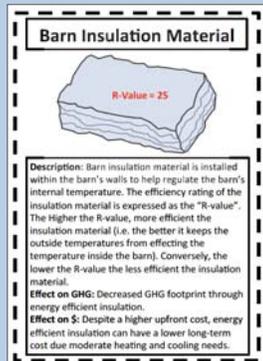
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### Farm Flashcards

- The **Farm Flashcards** combine descriptions with graphical renderings for each of the 3 Management System's components.
- Discuss the components effect on Greenhouse Gas emissions.
- Discuss the components effect on farm's finances .
  - The components/equipment discussed on the flashcards correspond to those in the Farm Management System Graphics.




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### Lab Report Form

- The **Lab Report Form** consists of several structured questions about the material within the activity.
  - Engage students about the considerations made when designing a swine farm
  - Engage students about the challenges of managing a swine farm.
- To be completed using cards that students (individually) drew from the deck and retained
- Encourage understanding of the stand-alone function and systemic role of the component/equipment.




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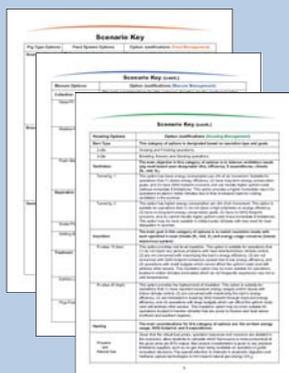
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### The Farm Management Option Guide

- A table which lists each of the swine management options and contains a brief explanation of their immediate effect on the pig and the carbon footprint of the farm.
- The FMOG is a tool included to assist the instructors in leading a discussion.
  - Effects management options have on farm management systems
  - How each decision effects financial resources.
  - How each decision effects the greenhouse gas (GHG) footprint.




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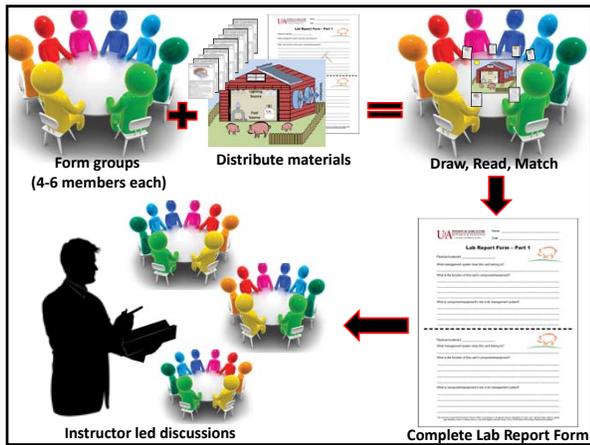
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Can you share any results?

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Please HOLD QUESTIONS until the Q/A portion of the webcast.

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