

Temperature and Ventilation (Air Flow) in the Barn

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Goal (learning objective)

Youth will learn how temperature and airflow in the barn (or stall) impact animal growth and performance.

Supplies

- Small room or closet with a door that closes
- Heat lamp or small heater
- Fan
- Ohio Learning Lab Kit you wish to use (either specific species or all species). Check with your local extension office on the availability of the kit and to check it out
- Animal comfort zones (diagrams in learning lab kit)- make enough copies for group
- (Optional) If you cannot create a cold room for Activity 3:
 - Bucket or large pan
 - Chilled water
 - Large bag of ice

Pre-lesson preparation

- Study animal comfort zones
- Study the effect of heat and cold stress on gain
- Review the environment and preferred thermal conditions for swine

Lesson directions and outline

Introduction

Explain to the youth that animals need to be housed and cared for in a place where the temperature and ventilation allow them to grow and gain for optimal performance. This can be achieved by understanding the temperatures where a species is most comforta-

ble.

Airflow or ventilation keeps the air free of harmful odors that make it difficult for animals and humans to breathe. Poor ventilation has a negative impact on animal performance and health.

Conducting the activity (DO)

Activity 1

1. Place the heat lamp or heater in the small room and turn it on.
2. Have as many youth as possible enter the small room wearing coats.
3. Close the door of the room for a few minutes with the youth inside and the heat left on.

Activity 2

1. Leave the heater on but place a fan in the room.
2. Have as many youth as possible enter the room wearing short-sleeved shirts.
3. Open the door to the room, and if the room has a window, open it.

Activity 3

1. Make the room as cold as possible
2. Have only a few youth at a time enter the room and close the door for a few minutes.

Optional Activity 3

1. Fill the bucket or pan two-thirds full of ice and chilled water. *Note: do this 10-20 minutes before starting so water is ice cold; stirring will help speed up the cooling process*
2. Have youth put both hands in the ice water for 60-90 seconds (remove hands sooner if they become too cold).
3. While doing this, have youth close their eyes and imagine how it would feel if their whole body was in the frigid ice water.

What did we learn? (REFLECT)

- Ask: How did you feel with the heat on, wearing a coat with the door closed?
- Ask: How did you feel when the room was cold?
- Ask: How did you feel when the fan was on and the door was open?
- Ask: When did you feel the most comfortable? Why?

Why is that important? (APPLY)

- Ask: In what ways do temperature and ventilation affect the animal you are raising?
- Ask: What will you do to make sure your animal is comfortable?
- Ask: How do temperature and airflow affect you at home?
- Ask: What impacts do temperature and airflow have on your community when an animal-feeding operation is nearby?

Resources

- National Pork Producers. (2007). *Youth Pork Quality Assurance Plus Youth Manual*, (pages 104-105).
- Ohio State University Extension. (2011). Management Practices. *Beef resource handbook* (page 3-1).
- Ohio State University Extension. (2008). Housing Facilities. *Goat resource handbook* (pages 147-149).
- Ohio State University Extension. (1999). *Quality assurance and animal care: youth education program curriculum guide* (Unit 3, level 1).
- Ohio State University Extension. (2011). Management Practices. *Sheep resource handbook for market and breeding projects* (page 21).
- Ohio State University Extension. (2000). Space Requirements for My Market Hog. *Swine resource handbook for market and breeding projects* (pages 11-4, 11-6, and 11-7).
- Ohio State University Extension. (1999). *Quality Assurance and Animal Care: Youth Education Curriculum Guide*, Unit 3, Level 2. (*Note: This document is available in the Learning Lab Kits and is the same for all species*)