

## *2011 Cold Weather Ventilation Quiz*

### Temperature and bird performance:

- 1) T F From a chick's perspective 85°F and 30% Rh is the same as 85°F and 60% Rh

### Heating system requirements:

- 1) T F Increasing the depth of insulation from 3 ½" to 6" in a dropped ceiling house will reduce heating costs by approximately 30%
- 2) T F The larger the house, the greater the volume of air that is in the house, the more it will cost to heat
- 3) T F When installing fiberglass insulation in the side walls, a moisture barrier should be installed just inside the metal siding.
- 4) T F The number of brooders/radiant brooders in a house should be determined by the number of chicks placed in the house.
- 5) T F Doubling the R-value of walls and the ceiling of a totally enclosed house will cut heating costs in half.
- 6) T F Half house brooding reduces brooding heating costs in half.
- 7) T F Increasing brooding temperatures the first week by five degrees will increase heating costs by 30% or more.
- 8) T F It costs less to preheat heat a house with built-up litter than fresh litter due to the heat produced by the built-up litter.

### Heating systems:

- 1) T F The typical forced air furnace burns over two gallons an hour.
- 2) T F A totally enclosed house requires 40% less heating system capacity as a curtain-sided house.
- 3) T F Furnaces are less efficient at burning propane than are radiant brooders.
- 4) T F Furnaces produce a "drier heat" than do brooders.
- 5) T F Installing forced air furnaces outside a house will result in increased oxygen levels and reduced carbon dioxide levels.
- 6) T F The number of radiant heaters should be determined by their Btu/hr rating.

### Air quality and bird health:

- 1) T F You are more likely to have problems with excessive carbon dioxide than low oxygen levels in a poultry house during brooding.
- 2) T F During cold weather brooding, the primary source of carbon dioxide is the birds.
- 3) T F Ascites is most often caused by low house oxygen levels.
- 4) T F High carbon monoxide levels are typically an indication of under ventilation.

### Moisture control:

- 1) T F 40°F air at a relative humidity of 100% is holding more water than 80°F air with a relative humidity of 30%.

- 2) T F Timer fan settings should be reduced on a rainy day to keep from pulling excess moisture into a house.
- 3) T F Using five minute timers instead of ten minute timers will lead to significantly higher electricity usage and therefore should not be used.
- 4) T F Burning one gallon of propane adds approximately six gallons of water to a house.
- 5) T F Fog forming inside the house when you turn on a fan during cold weather indicates that you are bringing moisture into the house.
- 6) T F A dusty house is a sign of under ventilation.
- 7) T F Cold, humid air is heavier than cold, dry air.
- 8) T F Litter caking is often associated with excessive leakage.
- 9) T F During cold weather it is best to use a 48" fan on the off brooding end for minimum ventilation.

Negative pressure ventilation:

- 1) T F The closer an inlet is to a fan the more air that will come in that inlet.
- 2) T F It costs less to operate two 36" fans on a timer than one 48" fan on a timer.
- 3) T F Proper fan placement is crucial in order to maintain uniform house temperatures and air quality during cold weather.

Air inlets:

- 1) T F A 40' X 500' poultry house should have 56 air inlets.
- 2) T F A 60' X 500' wide house will require more air inlets than a 40' X 500' house.
- 3) T F You should be able to operate at least half your tunnel fans through your side wall inlets.
- 4) T F A house should have one square foot of inlet area for every 750 cfm of tunnel fan capacity.
- 5) T F Wider houses typically require taller inlets than narrower houses.
- 6) T F Cold weather air inlets should be placed as near to the top of the side wall as possible.

Air inlet installation:

- 1) T F If you are having problems with inlet cables breaking you should increase the size of the cable.
- 2) T F If the inlets nearest the inlet machine are opening more than those at the counterweight end, the size of the counterweight should be increased.

Circulation fans

- 1) T F Circulation fans should ideally operate off of an interval timer.
- 2) T F Circulation fans generally be shut off once house temperature increases a few degrees above set point.