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Poultry Housing Tips

Reducing Broiler House Heating Costs

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Reducing heating cost is always a concern for broiler producers during the winter months. This year the concern is heightened due to predictions that propane could be over a dollar a gallon by the end of the winter. Over the past six years a number of *"Poultry Housing Tips"* have been written on the subject of reducing heating costs. The following is a summary of just a few of the topics covered in past newsletters that can help broiler producers reduce their heating costs.

1) Minimize air leakage.
Poultry House Tightness, January 1992

The tighter a house the easier it is to keep a house warm and fuel costs down. A tight house enables the producer to control how much fresh air is brought into a house as well as where it comes in (i.e., inlets as compared to cracks in the side and end walls). By bringing cold air in through planned side wall inlets, temperature stratification, bird chilling and litter caking can be kept to a minimum.

One way to gauge house tightness is to see how much static pressure can be obtained in the house by turning on one 48" fan, or two 36" fans, with side wall inlets and curtains closed. The higher the static pressure obtained the tighter the house is and the better able the producer is to control heating costs. The table to the right shows how house tightness can affect heating costs.

Static Pressure (")	Leakage Area (ft^2)	Rating	Daily Fuel Cost ($)
0.0 to 0.01	45	poor	36
0.01	32	poor	26
0.02	23	poor	18
0.03	19	fair	15
0.04	16	fair	13
0.05	14	fair	12
0.06	13	good	11
0.07	12	good	10
0.08	11	good	9
0.09	10	excellent	9
0.10	19	excellent	8

2) Install curtain pockets to increase curtain tightness. ***Curtain Pockets, December 1996***

When exhaust fans are off a significant amount of heat can be lost from the house if the side wall curtains are not held tightly against the side wall. A 12" to 18", single hemmed curtain, attached to the side wall above the side wall curtain, will form a protective pocket for the curtain to slide

into when the curtain is fully raised. Field studies have shown 10 to 15% fuel savings by installing such a curtain pocket.

3) **Use 48" fans for minimum ventilation when half house brooding.**
Half House Brooding Ventilation, November 1992
In tight houses with side wall inlets 48" fans can be used instead of side wall 36" fans for minimum ventilation. By using 48" fans, heat can be drawn under the half house curtain into the nonbrooding end of the house during brooding. This eliminates problems with ammonia being drawn from the nonbrooding end into the brooding end and helps to preheat the nonbrooding end.

4) **Replace ten-minute-timers with five-minute-timers.**
Ten-Minute vs. Five-Minute Interval Timers, February 1995
House temperature decreases half as much each time the fans come on with five-minute-timers as compared with ten-minute timers. If the house temperature drops half as much, heaters are less likely to come on. Furthermore, moisture and ammonia levels are kept to a minimum because fans stay off half as long.

5) **Use mixing fans to reduce temperature stratification in open ceiling houses.**
Stratification, is it costing you money? , April 1990
Hot air is lighter than cold air, and as a result, tends to accumulate near the ceiling. In houses with open ceilings the air near the ceiling can be 20^{o} or warmer than the air near the floor during brooding. Variable speed paddle fans directed toward the floor or 36" mixing fans directed toward the ceiling and controlled by a timer can push the hot air off the ceiling down to the floor reducing heating cost 20% or more.

6) **Install side wall inlets.**
Negative Pressure the Basics, October-November 1991
Side wall inlets and negative pressure can be used to direct cold incoming air brought in by exhaust fans along the ceiling. As the cold air moves along the ceiling it mixes with the hot air, increasing its temperature as well as moisture holding ability. Negative pressure ventilation and side wall inlets can reduce fuel usage during the winter months by 15 to 25% and provide improved air quality and reduced litter moisture

7) **When building a new house or when you want to replace your heating system consider installing radiant brooders.**
Radiant Brooders, January 1991
Fuel Savings with Radiant Brooders, March 1991
Radiant Brooder Installation and Management, December 1995
Radiant brooders concentrate their heating on the floor and the birds. Field studies have shown these brooders to be 15 to 30% more efficient than other brooder types. In addition, radiant brooders allow chicks to seek out the temperature at which they are most comfortable. Chicks can move toward or away from these types of brooders to warm or cool themselves.

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