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It seems that with any new type of equipment there is a honeymoon period where it works without flaw. After a period of time, however, it ends and the problems begin. Problems mount and within a few years the particular equipment in question is no longer put in new houses and the cycle begins again. We can all probably think of a device or management practice that this has happened to and now some producers say that it looks like forced air furnaces may be the next victim.

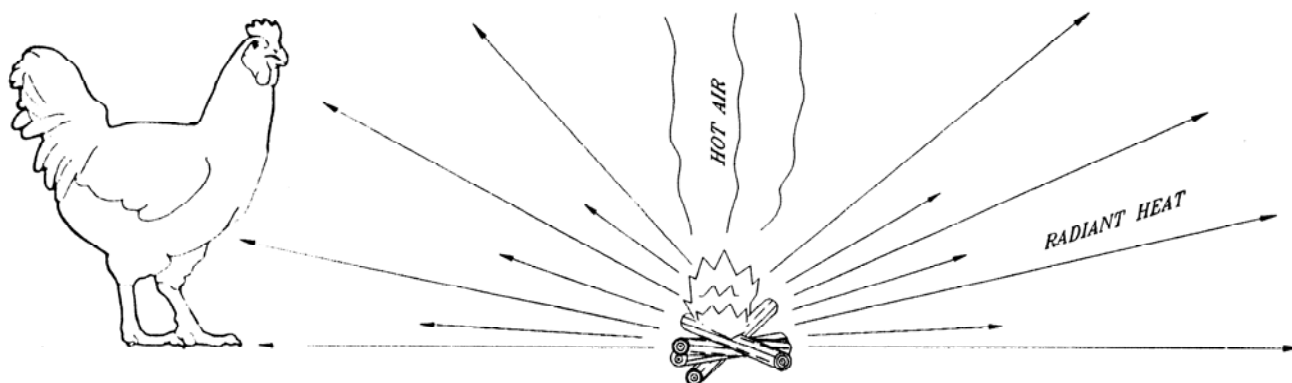
Recently there has been talk that forced air furnaces may not be without fault. Problems with dehydrated chicks and high mortality have led some people building new houses to examine other ways of heating their broiler houses such as pancake and infrared brooders. But, are the problems being experienced by some growers related to the furnaces or the management of the furnaces?

Probably the biggest problem with the management of forced air furnaces is that some producers operate them as they would pancake brooders. There is a significant difference in the way the two types of furnaces keeps chicks warm. Forced air furnaces only heat the air. Pancake brooders, on the other hand, supply heat to young birds in two forms, heated air and radiant heat. This doesn't mean the pancake brooder is better, just different.

PUTTING KNOWLEDGE TO WORK

Radiant heat is misunderstood by most people. Basically, radiant heat is a type of light. You can't see this type of light, but you feel its warming rays. Hot objects put off this form of light (infrared light) in addition to the form you can see (visible light).

An example of this type of heat is a camp fire on a cold fall night. The fire does not do much air heating around the area of the fire because the warm air produced by the fire quickly rises. But when you stand facing the fire, you feel warmth. This warmth is from radiant heat not air heat. You can tell that you are being exposed to radiant heat because only the portions of your body facing the fire will feel warm. Only the portions of your body facing the fire are being exposed to radiant heat. If the fire was heating the air near the ground, your whole body would feel warm. Basically only those surfaces which are exposed to the visible light will be exposed to the infrared heat.



Birds in a house with pancake brooders benefit from radiant heat. The small ceramic disk underneath the brooder is heated by the flames and then puts off radiant heat. If the house is too cold, the chicks move closer to the pancake brooder to warm themselves with radiant heat, just like you would if you were standing near a fire. If they are too warm, they move away from the brooder. Since they can get additional heat from the brooder, producers can get away with maintaining lower than suggested room temperatures during brooding.

The temperature in a house with forced air furnaces is relatively consistent; there are no warmer or cooler areas. Chicks in a house with forced air furnaces have no way of obtaining more or less heat so it is

very important that the producer watch his house temperature. If the house is too warm problems with dehydration can occur quickly. If too cold chicks may be cold stressed. Make sure you follow company guidelines. Just because you could keep a five or more degree colder house with pancake brooders does not mean that you can do it with forced air furnaces.

Many problems arise with forced air furnaces because they are not managed properly prior to the arrival of the young chicks. The problem is that forced air furnaces do a wonderful job of heating the air not objects. As a result, you can get the air in the house up to brooding temperature within a few hours, but the floor will still be cold. If the floor is cold the birds will be cold. A young chick will lose a significant amount of heat to a cold floor. A sign of this is cold feet. It is very possible to have a room temperature of 90°F and still chicks with cold feet. In addition, you have to remember that the birds are only a couple of inches tall. If the floor temperature is only 60°F, there is no way that the air within an inch or two of the floor will be 90°F.

This is typically not as much of a problem in a house with pancake brooders because the brooders heat the floor directly with radiant heat. It's not uncommon for the floor temperature around the brooder to be in the nineties and air temperature in the seventies. In this situation the birds would not be cold stressed provided they could all get close to a brooder.

The idea of preheating the room long before chicks arrive holds true for turning birds out into the full house. If the back half of the house is not adequately preheated the birds will not spread out. Birds will spread out much faster with a warm floor even if the room air temperature is a little cold.

To insure that your floor will be warm you might have to preheat your brooding area more than a day in advance. To increase the transfer of heat from the air to the floor, run a couple of circulation fans before the chicks arrive. To check your progress place a thermometer down in the litter.

You can run a couple of circulation fans to help keep the air near the floor warm during brooding. Care must be taken so that air movement near

the floor is kept to a minimum. Direct circulation fans upward. Make sure you watch the birds' reactions to the circulation fans. If they move away there is too much air movement on the floor and problems can result.

There is a trade off with every benefit. With the decreased time spent on lighting pilot lights, adjusting brooder height, and cleaning orifices, comes an increase in the level of management required with forced air furnaces. Forced air furnaces can do an effective method of providing heat to broiler houses if care is taken. The key is to closely monitor room temperature and adequately preheat the house.