

# Summer heat control critical in broiler houses

**NEWARK** — Delmarva broiler growers watch fearfully for that prolonged, extreme heat wave. When broilers are exposed to temperatures above 100 degrees F., some will die. But when the temperature soars above 105 degrees F., they die by the thousands. And in this catastrophe the so-called weaker sex proves to be the stronger—about 90 per cent of the dead birds will be cockerels.

Since the cockerels in a flock on the average will be one-half pound heavier than the pullets, and since older birds are more susceptible to heat stress than younger birds, the economic loss is usually severe.

According to University of Delaware Extension agricultural engineer Ernest W. Walpole, growers with modern, well-insulated, mechanically ventilated broiler houses have the best chance of surviving a heat wave with minimum losses. Insulation resists or slows down the heat flow into a building. In doing this, it stores a lot of heat. The insulation, the attic, the whole house becomes quite warm and stays warm long into the night. The secret is to get the house cooled off before the next day's heat returns and also to use the cooler night air to relieve the birds even before the house has cooled off. This is where the mechanical ventilation system has no equal.

There are two systems commonly used in this part of the country:

Fans fixed in the side wall, used with adjustable air inlets.

Fans suspended from the center of the house all blowing the same direction down the length of the house.

With the first system (fixed fans), it is important to realize that air movement inside the house is entirely dependent on the velocity of the incoming air. Therefore, one should keep windows or curtains and doors closed, forcing all incoming air to come through the controlled air inlets. These inlets should be adjusted to get an air velocity of 800 feet per minute. The air should be deflected towards the floor (in Winter it should be directed across the ceiling).

A person should set the thermostats of one-third of the fans, providing around 1 CFM per bird at 70 degrees F. Early in the morning, the thermostats of the remaining fans should be set at 85 degrees F. The outside air should warm up faster than the pen air and a person wants to keep the pen air cooler than outside as long as possible.

Sometime in the afternoon, when all fans are running, one should set the 85-degree F. thermostats back to 75 degrees F. This will keep them running most of the night, or at least until the house cools down to 75 degrees F. The outside temperature starts dropping after 4 p.m., and one wants to use the cooler evening and night air to cool the birds and the house as rapidly as possible. There is no danger of chilling the birds or stressing them with drafts while the air temperature is above 75 degrees F., notes Walpole.

With the second system

(fans in center of house), one should open all windows or curtains and end doors. A person should use 30 to 36 inch diameter fans, set no more than 40 feet apart. Air should blow to the north or east end depending on house orientation. If there is a heat wave the wind, if any, will be from the south to southwest. One should blow the air with the wind; not against it.

Early in the morning, all the fans should be set at 85 degrees F. With an open house, there is no need to start the fans before the birds are uncomfortable. Then, as with the first system, one should set the thermostats back to 75 degrees F. so they will continue running until the house has cooled off.

With both systems, one should provide adequate attic ventilation, having continuous ridge ventilators or unit ventilators providing one square foot of exhaust area for each 200 square feet of floor area. One should

provide soffit inlets of equal area to the exhaust ventilators on the ridge.

If, in spite of best management, the pen temperature gets above 100 degrees F., and birds start dying, one should spray water directly on the birds using a hose with a fine mist nozzle. A person may end up with a wet house, says Walpole, but the birds will likely stay alive.

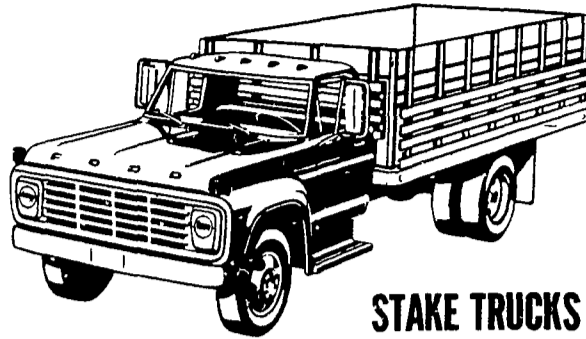


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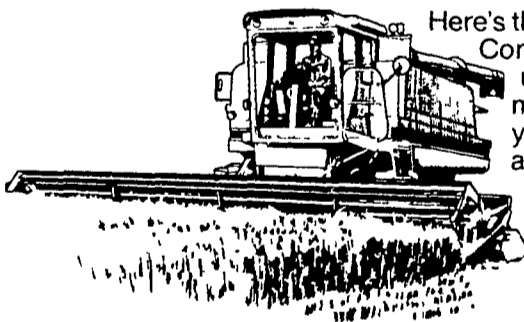
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