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Poultry Housing Tips

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Fan and Light Bulb Operating Costs

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Electricity cost is of concern to most poultry growers, especially those with tunnel-ventilated houses. Over the past five years many growers have seen their yearly electricity bill slowly increase to the point that it exceeds their fuel bill. Though in most instances the increase in electricity usage has resulted in increased bird performance, it still hurts when that electricity bill shows up every month.

Reducing electricity costs is easy, just turn off your fans and lights. Reducing electricity usage and maintaining production is another story. One of the keys to trying to reduce electricity cost is having a feel for what it costs to operate a fan or light bulb for a specific amount of time. Without this information, growers sometimes place blame on the wrong piece of equipment in their houses.

For instance, 100 watt light bulbs are used in many breeder and layer houses in order to maintain adequate lighting levels. A 500' house may have 60 or more light bulbs operating as long as 16 hours on cloudy days during the winter. Upon receiving high electricity bills growers may be inclined to blame the few exhaust fans they are running, and in an effort to reduce their electricity bill switch to curtain ventilation. The fact is that a few fans on timers may cost the grower a few dollars a week to operate, whereas light bulbs are costing almost $50 a week. By cutting back on power ventilation and relying on natural ventilation, the grower may save a few dollars, but cost himself much more in the long run due to his inability to accurately control house temperature. To significantly reduce monthly energy costs the grower should look into replacing his incandescent lights with high pressure sodium or fluorescent lighting rather than reducing his control over ventilation.

A similar argument can be made during the summer when growers want to switch from tunnel ventilation to natural ventilation at night. By switching from tunnel to natural ventilation for eight hours a day for an entire week a grower would reduce his energy cost by about $50, but probably cost himself much more in performance because his birds may not be adequately cooled at night.

The following list should help direct your efforts in reducing energy costs.

It costs...*

$10 a year to operate a 40 watt incandescent light bulb in the average broiler house.

$2.25 a year to operate a 7 watt fluorescent light bulb, equivalent to a 40 watt incandescent, in the average broiler house for a year.

$40 a year to operate a 100 watt light bulb for 16 hours each day.

seven cents to operate a 48" fan for an hour.

the same to operate one 48" fan for one hour as it does to operate nine 100 watt or twenty three 40 watt light bulbs.

three and a half cents to operate a 36" fan for an hour.

$2.35 a week to operate two 36" fans on a timer operating 2 minutes out of 10.

$12 a day to operate seven 48" fans.

only four percent more to operate a fan at a 0.10" pressure as it does at zero static pressure.

the same to operate a fan at 240 volts as it does at 120 volts.

Did you know....

installing energy efficient motors can reduce fan operating costs by as much as 10 percent.

an incandescent light bulb will have to be replaced two to three times a year in the average broiler house.

a compact fluorescent light bulb will last approximately two years in the average broiler house.

electronic light dimmers reduce the power usage of light bulbs as they are dimmed. If the lights are dimmed half way, electricity usage is reduced by approximately one half.

a significant number of fan motor failures are caused by the motor overheating due to the build up of dust.

a significant number of circuit breaker overheating and trips are caused by loose wire connections.

when remodelling a house for tunnel ventilation the power company should be contacted to see if your transformer can handle the additional power requirement.

* All cost estimates based on electricity cost of $0.07 per kilowatt*hour

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