

Electric Heating for Broiler Rearing

Following development work undertaken by the Farm Electric Centre, electric brooding can now be regarded as a competitive alternative to more commonly used fuel fired systems.

How can electricity be competitive?

Many people, when considering the viability of an electric heating system in comparison with a gas or oil system, might look no further than the net cost of the fuels.

However, this is only half the story. A number of other factors have to be considered which will affect final running costs.

Efficiency of heat transfer to the chick - Electric heaters are particularly efficient at producing radiant heat. This means that the chicks are heated directly by infra-red radiation without it being necessary to keep the air temperature high. Lower air temperatures mean lower energy consumption for brooding. Electric radiant systems invariably use less energy than conventional fuel fired systems.

Efficiency of heaters - Whether radiant or otherwise, all the energy going into electric heaters is converted to heat. Electric heaters are therefore 100% efficient. This cannot be said for any other type of fuel fired heating equipment.

Controllability - Sensitive electronic controls are available to modulate the output of electric heaters so that the temperature requirement of the chicks can be matched exactly. Accurate control means the best environment for the birds and low running costs.

Heater types

Medium wavelength heaters with simple aluminium reflectors have proved to be reliable, robust, easy to handle and are cheap to buy.

Control of the environment

Both heating and ventilation are fully interlocked by a central control unit which monitors under brooder radiant temperature (using a specially designed probe) and switches heaters and fans accordingly. A 'minimum' ventilation rate can be set independently of temperature to keep the air fresh in all conditions.

Bird performance

Bird performance seems to be as good, if not better with electric heating as with any other fuel. It is an endorsement of the effectiveness of the system that previous winners of the NFU Broiler Efficiency Award, Broadfleet Poultry, use electric heating.

What if the electricity supply fails?

Some form of stand-by system is needed in the unlikely eventuality of supply failure. A stand-by generator can be used to give an alternative supply. When this proves to be too expensive, a crude gas or oil fired burner can be a suitable short term alternative at a cost of about £400 for 15,000 birds.

Summary of the benefits

- Superior environmental control for good bird performance.
- Competitive running costs.
- Lower air temperatures mean better working conditions.
- Inexpensive, lightweight and easy to handle heaters.
- Virtually maintenance free.
- Advanced automatic control available.