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AGRICULTURAL ENGINEERING NO. 2**DONALD W. BATES****Using Electric Heat Lamps on the Farm**

You can find many uses for infrared heat lamps on the farm. These lamps provide a warm area or comfort zone directly beneath them in a relatively cold building.

Infrared heat lamps come in two sizes: 125 and 250 watt; the 250-watt size is the most popular. Heat lamps are made from either standard glass or hard (pyrex) glass. Standard glass bulbs cost less but break more easily than pyrex glass bulbs. Select the hard glass type for places where water may splash on the bulb.

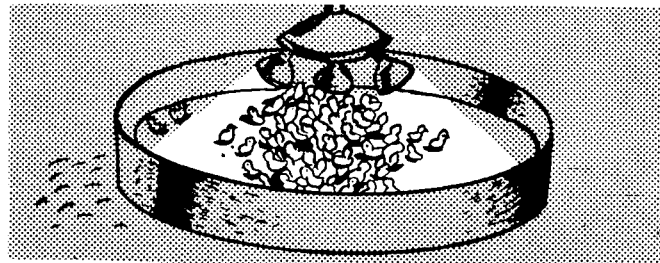
Heat lamps fit standard sockets. But, only use porcelain sockets because they withstand heat better than other types. Several fixtures, coming singly or in multiple units, are on the market for infrared lamps. An infrared heat lamp lasts about five times longer than an ordinary light bulb.

BROODING PIGS AND CHICKS

Electric heat lamps are often used for brooding pigs and chicks. Research showed that weak pigs in a newly farrowed litter tend to chill when pen temperatures are 40° F. or lower. Since pigs are most susceptible to chilling immediately after birth, apply heat to the farrowing area just before you expect the sow to farrow.

A 250-watt infrared lamp supported 36 inches above the floor prevents chilling of newborn pigs in pen temperatures above 30° F. If the pen temperature is between 15° and 30° F., use two lamps.

You can provide additional protection to newborn pigs after farrowing by moving heat lamps to a protected corner and keeping out the sow with a barrier. Place the barrier high enough so that the little pigs can get under it. With this arrangement, one 250-watt lamp mounted 24 inches above the floor prevents chilling when pen temperatures are as low as 15° F.



After pigs are 3 or 4 days old, there is little danger of chilling. Nevertheless, continue to operate the corner brooder to reduce the danger of the sow crushing the pigs.

An advantage of infrared heat lamps for brooding chicks is that the heat is reflected down on the chicks so they can select the temperature they want. By watching the chicks, you can judge the proper height for lamps. If lamps are too low, chicks spread out around the fringe of the radiation area. If lamps are too high, chicks bunch together in the center.

For 1-day-old chicks, you usually can use a lamp height of 18 inches above the litter. In any case, never place lamps lower than 12 inches or higher than 24 inches.

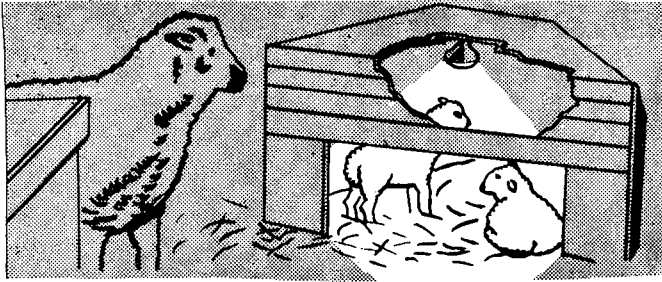
You can employ heat lamps for brooding chicks either singly or in multiple mountings. For brooding large numbers, multiple mountings are recommended. Many mounts have thermostats that automatically turn some lamps on and off.

If the average brooder house temperature is 50° F., one 250-watt infrared lamp is generally sufficient for 80 chicks. One chick can be added to this estimate for every degree over 50° F.; one chick should be subtracted for every degree below 50° F. So if the average brooder house temperature is 35° F., figure one 250-watt lamp for 65 chicks.

Tests indicated that 2 to 3 kilowatt hours of electricity are needed per chick when lamps are burned continuously during the first 8 weeks.

HEAT LAMPS FOR LAMBS

By using heat lamps for lambs during their birth, you can assure them a better start in life. In general, a lamb needs only 1 day under the brooder.



Fence the ewe away from the heat lamp but don't separate her from the lambs; hang the heat lamp behind a partition. Build this partition with an opening 18 inches high so lambs can move freely to and from the brooder. The lambing pen itself must be large enough for the ewe and her lambs. To prevent scorching the lambs' wool, hang the heat lamp 42 to 48 inches above the floor.

TAKE THESE PRECAUTIONS

An infrared heat lamp can ignite dry litter when the lamp is very close. Extensive tests showed that there is no danger of igniting or charring litter with a 250-watt heat lamp when the lamp is 9 or more inches above the litter.

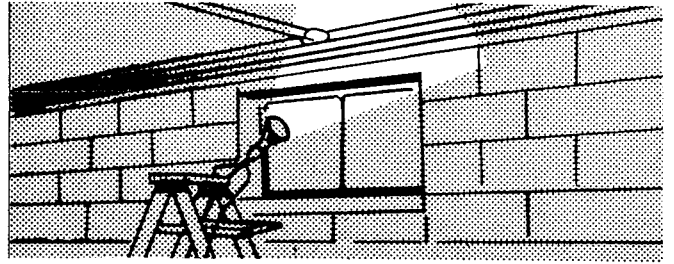
Use a protective guard to prevent the lamp from breaking and to keep it from contacting the litter if it accidentally falls. Do not suspend lamps by the electric cord; use a chain attached to the fixture.

Good wiring is important for safe and satisfactory operation of infrared heat lamps. Provide permanent electric circuits using plastic-covered cables that are resistant to moisture and acid.

Up to five 250-watt lamps can be used on one circuit of number 14 wire fused at 15 amperes. Seven lamps can be used on a number 12 wire circuit fused at 20 amperes. For more lamps, provide additional circuits.

A VARIETY OF HEATING JOBS

Infrared lamps are well suited for many heating jobs on the farm. A few of these are:



Providing supplementary heat in the milkhouse. A bank of lamps over wash vats provides warmth for comfort when you wash utensils. In addition, lamps provide extra light to assure a thorough job of cleaning. Use hard glass bulbs.

- Thawing frozen water pipes. (If pipes are located where there is danger of freezing in severe weather, wrap them with heating cable or tape.)
- Warming cold engines (tractor, truck, or car). A lamp directed at the oil pan for an hour or even overnight makes starting easier in cold weather.
- Warming tools when working in cold buildings.
- Keeping poultry waters from freezing.
- Drying paint, glue, plaster, etc.

