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BROODING WITH ELECTRIC HOVERS

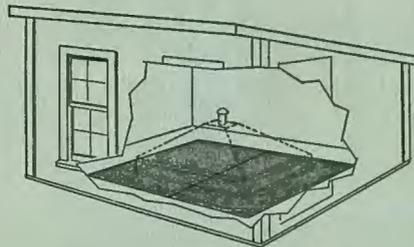
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If you believe in evolution, you might expect the hens of the future to be deprived of the ability to cluck, as the hen already has almost lost one of her nature-given tasks—serving as a hover for young chicks. With the introduction of the coal, wood, oil, gas, and recently the electric hover, artificial brooding of chicks has become almost a universal practice. However, the chicks still thrive best under conditions most similar to those provided by mother nature—in this case the hen. The "cold room" method of brooding provides temperature conditions similar to those offered by the hen. Only the area directly under the hover is heated while the rest of the brooder house that is used for exercise, feed, and water is protected only from cold drafts and rain.

Important advantages of the electric hover cold room method of brooding have been reported in a survey of over 200 users in this state to be: (1) Reduced fire hazard, (2) less labor required in both caring for the brooder and also watching it while chicks are young, and (3) earlier feathering of chicks and more rapid development. The disadvantages reported were: (1) Inability to maintain proper temperatures in cold weather and (2) tendency to crowd. Both of these can be remedied by the proper size of brooder and sufficient insulation of both the floor under the brooder and the hover. No serious death losses were reported due to electric power outages. From this report and those from other states, it appears that with properly designed equipment and proper management electric hover brooders are practical and economical for young poultry.

The brooding period is over for this year, but there is always another year coming, and now is the time to take notice of new developments in chick brooding so one may decide whether or not he ought to make certain changes for next season. In checking over electric hover brooders, points which should be noticed are: (1) Size and (2) design and construction.

Size.—Do not overcrowd an electric hover brooder. Although 7 square inches has been a commonly used figure as the hover area for day-old chicks, 10 square inches will give better results throughout the brooding season for leghorns. Heavy breeds should have 12 square inches, while turkeys require about 20 square inches. A round brooder 56 inches in diameter has capacity for 250 leghorns or 200 chicks of a heavy breed. Many experienced users have stated that a 300-chick unit is the largest practical size.



The floor must be well insulated for electric brooding

Design and Construction of Brooder.—A well-designed brooder should incorporate the following features: Sufficient insulation of the hover which is protected from picking by chicks; a conveniently located thermostatic temperature control; a curtain and some means to adjust the height of it above the floor; an attraction light; a window in the hover for inspecting the chicks; a thermometer placed not less than 6 inches from the outside edge of the hover; a heating element having a capacity of approximately 2 watts per 10 square inches of hover area, the temperature of which will not become high enough to ignite any litter which may come in contact with it; and a positive means of ventilation either by natural draft or by a small electric fan.

Installation of Hover

Since the hover heats only the area directly under it, a wise precaution is to place extra insulation on this area of the brooder house floor. This can be done by laying a piece of ½- or 1-inch insulation board on the floor or by making a platform out of matched lumber nailed to 1-inch cleats. The 1-inch cleats are laid next to the floor thus giving a 1-inch air space which adds considerably to the insulation value if no air is allowed to circulate through it. Two to 4 inches of litter, such as ground corn cob, peat moss, or wood shavings, are desirable for additional insulation.

Experiments have shown that it does not pay to spend money for additional insulating materials for common type brooder house wall construction. However, the walls should be air tight to prevent drafts. Ventilation of the brooder house must be provided to remove the moisture given off by the chicks. This may be done by placing small openings in the front of the brooder house near the roof. A convenient way to install the

hover is to hang it on a rope which runs through two pulleys fastened to the ceiling of the house. A weight fastened on the other end of the rope acts as a counterbalance. Be sure to have the size of electric wires running to the brooder large enough, or low voltage with inefficient as well as improper operation will result.

Operating an Electric Brooder

To teach the young chicks where the warmth is and to keep them from becoming chilled during the first few brooding days, place a fence of cardboard or flat sheet metal about 15 inches high around the hover about 6 inches away from the edge. As the chicks grow older, this fence may be moved back, and after a week or ten days it may be broken into four sections, each of which is placed in a corner of the house to discourage any crowding or piling up at these places.

Observation as to where the chicks are sleeping under the hover indicates best the proper temperature of the hover. When the chicks are quite evenly distributed under the whole hover area, proper temperatures are being maintained. To change the temperature, the ventilation may be regulated, the hover proper may be raised or lowered from the floor, or the thermostat adjusted. Chicks should be weaned from the brooder as early as possible. This may be done by inserting around the walls of the house three or four rows of roosts which start on the floor and run to a point two or more feet high on the wall. Hardware cloth or small chicken netting placed just under the roosts will keep the chickens away from manure and out of corners.

Cost of Operation

Extensive investigations have shown the consumption of energy for electric brooding to vary from 1.0 to 1.5 kilowatt-hours per chick, the variation being due primarily to the time of year, the skill or experience of the operator, and the length of the brooding period. A carefully metered test conducted with four different makes of electric brooders on a farm in Douglas County showed the total consumptions for a brooding season from April 11 to June 6 to be 232, 318, 318, and 315 kilowatt-hours for both light and heat in the four houses. Two hundred and eighteen poult were started in each house.

The Agricultural Engineering News Letter will be discontinued after this issue.