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EC1403 Incubation Pointers

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INCUBATION POINTERS

by H. M. Wells,

One of the essentials of successful incubation is that we study the instructions sent with the incubator and operate the machine accordingly. The manufacturer understands his incubator and is just as much interested in having it give good results as is the operator.

Other factors which influence our hatches are the condition of the breeding stock and care of the hatching eggs. The chicks are obtained from matings of strong vigorous hens and cockerels rather than from cockerel and pullet matings. The mating of cockerels and pullets year after year will have a tendency to weaken the vitality of the chicks which is one of the causes of chicks dying in the shell

Incubator Temperatures

Before placing the eggs in the incubator, it is advisable to run the incubator for two or three days so as to test it out and get the thermostat regulated for the correct temperatures. When the eggs are placed in the incubator the temperature will drop, but do not change the thermostat or regulator as inside of twenty-four hours the eggs will become heated to the point where the temperature was regulated before the eggs were set. As soon as the chick embryo begins to grow it will give off more heat and this will have a tendency to cause the incubator temperature to rise. This is the reason some successful incubator operators prefer to operate the machine the first week at 102°, the second week at 103°, and the third week at 104°.

Holding Eggs for Incubation.

Eggs that are to be held for incubationsshould be kept in a cool place at a temperature of 50° and not held for too long a time. The fresher the eggs, the better the hatch, and it is seldom advisable to hold the eggs longer than ten days. The eggs that are being saved should be turned once a day so as to change the position of the germinal disk.

Turning, Cooling and Testing.

After the third day and until the eighteenth day, the eggs should be turned twice a day and cooled at the same time. The eggs are sufficiently cooled when they are of the same temperature as the eyelid or the back of the hand. On the seventh day the eggs should be tested out for infertile eggs and dead germs, and to determine the extent of evaporation. At this time, the air cell should be about three-eighths of an inch in diameter. If the air-cell is larger than this, moisture should be added, either by sprinkling the floor underneath the incubator or by keeping damp cloths on the inside of the incubator underneath the egg tray. On the fourteenth day of the hatch, the eggs should be tested out again, and the dead germs taken out. The air-cell should be noted. An air-cell approximately five-eighths of an inch in diameter is desirable at this stage of incubation.

After the eighteenth day the incubator should not be opened until the hatch is complete. On the 21st day, if the glass in the incubator door should be covered with moisture, the door can be opened about the width of a match stick.

Causes of Poor Hatches.

Inaccurate thermometer - Before starting the incubator for the season, test the incubator thermometers with a physician's clinical thermometer or a standard tested thermometer, by placing themboth in a bowl and adding warm water until it shows 103° on the clinical or tested thermometer. Then check up the incubator

thermometer with it. One degree either one way or the other will result in poor hatches.

Location of incubator - The incubator should be located in a room where there are no drafts or sudden changes of temperature. That is why it is advisable to have the incubator operated in the cellar. An opening of some kind should be provided in the cellar near the ceiling to allow the foul air and gases which may arise to escape. If the cellar is provided with cellar light windows, one of these preferably on the south side should be opened. Either burlap or muslin should be tacked over the opening so as to prevent any direct draft.

When the incubator is operated in another room of the house, there should be no heat in the room. A north side is preferable as the sunshine in the other rooms would change the room temperature during the daytime.

Uneven temperature - The causes of uneven temperature are: incubator not set level; insufficient insulation in the incubator walls. A spirit level should be used to level the machine, otherwise the water in the heating system of hot water incubators will not circulate properly and uneven temperatures will prevail in the different parts of the incubator.

Chicks dying in the shell - Either caused by weak breeding stock or lack of moisture. The moisture should be added about the fourth or fifth day by the methods described in "Turning, Cooling and Testing".

Infertile eggs - These are due to males in the breeding pen being weak or out of condition.

Chilled eggs - Will result in dead germs, a prolonged hatch, or chicks dying in the shell. The eggs may become chilled in the nests in cold weather when they are not collected often, or if they are left out of the incubator for too long a period when cooling them, during the hatch.

Lack of moisture. - This causes the eggs to evaporate too rapidly, causing the chicks to be stuck in the shell. Moisture can be supplied by means of sand trays, damp cloths or wetting the floor beneath the machine. Recommendations vary with different machines and different conditions.

Crippled chicks - If the eggs are not turned often during the hatch or when they are being saved for incubation is one of the causes of chicks being crippled.

Do not place newspapers or any smooth surface material under the egg trays when the chicks are hatching out, as the chicks will slip and slide which will cause leg weakness and cripples. Burlap or some sort of cloth is more practical.

Improper incubation - Too high a temperature during the hatch, causing the chicks to hatch out before the 21st day, and weakening the vitality of the chicks. Too low a temperature will prolong the hatching period and will cause a low percentage of the hatch, especially if the eggs are from weak breeding stock. Kerosene oil on the eggs will also cause poor hatches as the oil will penetrate through the shell and kill the embryo. It is necessary, therefore, to turn and cool the eggs before filling the lamp, otherwise the oil will get on the hands, thus transferring it to the eggs. Washing the setting eggs will also cause a poor hatch.

A summary of the essentials for successful hatching will include:

Good strong vigorous breeding stock.
Uniform heat in incubators.
Good ventilation.
Sufficient moisture.
Careful attention of the operator.