

SOME REASONS FOR POOR HATCH

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Poor results in hatching are commonly caused by the improper control of temperature and/or humidity. Improper control means that the temperature and/or humidity is too high or too low for such a long period of time that it interferes with the normal growth and development of the embryo.

To obtain the best possible hatch, keep the temperature as near 99° F as possible for the entire incubation period. There will be a fluctuation of a degree or two above and below 99° F, but there should not be prolonged periods of high or low temperature. High temperature is especially serious.

An incubator which is run warm, constantly averaging a bit above 99° F will tend to produce an early hatch. One that is run cold, a bit below 99° F will tend to produce a late hatch.

To obtain the proper temperature reading, locate the bulb of the thermometer so that it is on a level with the place where the embryos begin to develop in the egg. This is approximately $\frac{1}{4}$ inch below the top surface of the shell when the egg is on its side. This applies to chicken, duck, pheasant, quail, and other species of eggs.

Check the thermometer! Is it accurate? An error of one degree for twenty-one days can seriously influence embryonic growth.

To check the incubator thermometer, place the bulb next to the bulb of a clinical (the oral kind used to check body temperature) or a laboratory thermometer. Hold under lukewarm tap water and compare the readings. Make an adjustment for any error in the incubator thermometer.

A thermometer in which the mercury column is split will not give an accurate reading. It is no good; dispose of it.

Rarely is the humidity too high in a still-air incubator. Normally they tend to run low. Thus in the incubator built according to Lesson L-8-1a, How to Make A Still-Air Incubator, the water pan should cover at least one-half of the bottom surface of the incubator.

The humidity should be raised for the three days before the eggs hatch. ~~Adding another water pan or a wet sponge helps to do this.~~ Embryos need to be soaking wet to hatch properly and easily.

Humidity in the incubator should read between 55 and 65% relative humidity for the first 18 days - and between 70 and 75% the last three days. It is very difficult to measure humidity in a still-air incubator, thus the egg is the best humidistat. Candle the eggs to observe the air space as indicated in Lesson L-8-1b, Incubating Eggs. High humidity tends to produce a late hatch; low humidity an early hatch.

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DO NOT turn the eggs the last three days of incubation. The embryos are moving into hatching position and do not need to be turned. Keep the incubator closed to maintain proper temperature and humidity, but DO NOT seal up tight for the embryos need oxygen.

Don't forget to place a clean cloth, an old clean towel will do, on the screen. This protects the naual from injury. The naual is the place where the abdomen closed after surrounding the remains of the yolk.

The longer eggs are held before setting the lower the viability will be. Set eggs before they are ten days old. Viability rapidly drops to zero in eggs more than 10 days of age.

Place the newly hatched chicks in a brooder. Brood as instructed in L-8-3c, Brooding Unit for Small Numbers of Birds.