



YOUTH EXHIBITION POULTRY ASSN.

ARTIFICIAL INCUBATION

**Four factors are of major importance in incubating eggs artificially:
temperature, [humidity](#), ventilation, and turning**

Extensive research has shown that the optimum incubator temperature is 100° F when the [relative humidity](#) is 60 percent, the air is 21 percent oxygen, 0.5 percent carbon dioxide, and air movement past the egg is at 12 cubic feet per minute.

Temperature

- Incubator temperature should be maintained between 99° F and 101° F. The acceptable range is 97° to 102° F. High mortality is seen if the temperature drops below 96° F or rises above 103° F for a number of hours. If the temperature stays at either extreme for several days, the egg may not hatch. Overheating is more critical than under heating. Running the incubator at 105° F for 15 minutes will seriously affect the [embryos](#).

Humidity

- The [relative humidity](#) of the air within an incubator for the first 18 days should be 60 percent. During the last 3 days (the hatching period) the relative humidity should be nearer 65 to 70 percent. Too much moisture in the incubator prevents normal [evaporation](#) and results in a decreased hatch, but excessive moisture is seldom a problem in small incubators. Too little moisture may cause the [chick](#) to stick to the shell and be crippled at hatching time.

Turning

- Turning the eggs during the incubation period prevents the [embryo](#) from migrating through the albumen and sticking to the shell membrane. Chicken eggs should be turned three to five times daily from the 2nd to the 18th day. Do not turn the eggs during the last 3 days!

Ventilation

- The best hatching results are obtained with normal air, which usually contains 21 percent oxygen. It is difficult to provide too much oxygen, but a deficiency is possible. It is possible to suffocate the eggs and chicks in an air-tight container.