

MANAGEMENT OF HATCHERY

HATCHERY:-There are two types of hatching:-

1)- Natural Hatchery. AND 2)- Artificial Hatchery.

1)- Natural Hatchery chicks :- The chicken laying a few eggs, kept & incubating there eggs during the period of fetal growth, which takes (21)day, (for chicken). Until the eggs hatch into chicks} Without Human intervention}

1)- Natural Hatchery chicks :-

= This type of hatching, today is not following in the modern poultry industry, Which was based industry around the world on Artificial Hatching Chicks.

2)- Artificial Hatching Chicks:-

The modern hen is a Tradition as an alternative means, where predispose automatic hatching machine requirements for Embry-onic development of { Ventilation, Temperature, Humidity, and Turn Over Eggs}. Egg hatch in to chick With Human intervention (100%).

2)- Artificial Hatching Chicks:-

=Possibility produce of large numbers of hatching chicks at one time.

- **Hatchery specification**
- **The necessary conditions that should be available in the hatchery building.**
 - 1)-Floor of Cement:-** Must be free from **Cracks** and **Holes**. Must be **Sloping** towards the **direction** of water courses to facilitate the **discharge** of wash water
 - **2)-The Building to be higher than the ground to the level of the building dock to facilitate the loading and discharging vehicles .**

- **Hatchery Building.**
- **3)-Rooms and Halls of hatchery are not subject to Air Currents and direct sunlight.**
- **4)- HALLS of Hatchery Building;- Must Be good Ventilation to get rid of Bad Air and Excess Moisture.**

Hatchery Building.

5)-Hatchary Bulding ;- Provide generators for uses in case of power failure.

6)- Hatchary Bulding;-Provide batteries to bosom surplus chicks have not been marketed.



**Un-limit
Your
Incubation**







Turn Over Eggs





Turn Over Eggs







- **Conditions to be provided in the fertilized eggs to the hatchery contained:**
- **1)-The Eggs should be Output from breeders dedicated to Produce Hatching Eggs.**
- **2)-Fresh eggs should be stored in an appropriate atmosphere that does not affect the vitality of embryo , & the StoragePeriod Should Not Be More Than ONE WEEK,**
- **More Storage Time= Less Hatchability.**
- 3)-The eggs:= should be Oval Shape :Rounded. =but not Elongated or Very large or Very Small. =but should be Medium-Sized.**

- **Elements of hatching**
- **1)-Temperature:=** The embryo needs **High temperature** in the **Early days of hatching.** & **Needs Less Heat** in the **Last Days** as a result of **integration** of the embryo and began to produce **Self Heat**.
- **= THE HIGH TEMPERATURE:-** Accelerate the **rate** of Embryos Growth. & **Leads to destruction** the **hatched chicks** therefore **will be small in size & weaker** than the **chick** hatched in **NATURAL TIME**.

= LOW TEMPERATURE:-

1)-Lead to delays the embryo growth &

2)- Leads to occur abnormalities in the embryo. &

3)-Lead to delay in hatching time&

4)-Lead to some mortalities

=The fluctuation of the temperature all the time:-

=Displays the embryo to the different speeds of growth of its members lead to the distortions & imbalance in the composition of the body &

=Lead to:- loss of embryos at an early age.

- **2-Ventilation:** The Embryo Needs Oxygen as its natural proportion in the air through all the stages of growth ,& Also needs CO₂ in the early days of the incubation period as its used in the interaction with the crust and withdrawal of calcium needed to build the skeleton structure ,

2-Ventilation:

=Therefore we must not exceed the proportion of CO₂ more than (0.5%) in the first days of the Incubation.

Proportion of CO₂ , not less than (0.3%) at the end of Hatchery.

Incubation. = Hatchery.

2-Ventilation:

=Excess CO₂ proportion leads to weakness of the Embryo vitality , distorted and suffocation , generally must be renewed air brooder eight(8)Times Per Hour & depending on the size of the hatchery to increase to (12)times in the Last Two Days before hatching.(19Day)

3)-HUMIDITY:

- **HUMIDITY IN THE EGGS.**

Content Evaporates, **continuously** through **cortex pores** , this process could be managed by controlling the **Relative Humidity** surrounding the **egg** .

If the **Humidity** is **Low**, **Evaporation** **Increases** from the Egg & Vice Versa

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3)-HUMIDITY:

Humidity is necessary for metabolism & to get rid from Biological Wastes & to Regulate the temperature.

Low Moisture leads to a large number of chicks conjoined to the egg shell.











4)-Turning:

=The **P**rocess of **T**urning **E**ggs:- It's the **key factor** that **P**rovide **correct**

embryo growth & prevent him from **sticking** to the **shell**, especially in the **Early Days** of the **Incubation period**.

=As the **Egg Yolk** always **Floats** to the **Top**.

=Because of its **HIGH FAT** content that **Holds** the **Germinal Disc** in the upper surface ,

- when the **embryos growth** starts in the **confine** space between the **Yolk & Egg Shell Membrane** & **Sticks to the Interior of the Shell** & lead to **Mortality**.
- **Turning Egg:-** Usually at an **angle** of **(90°)** degrees **(45°)** degree to the Top & **(45)** degree to the down ward .

=Turning the eggs during the, period of incubation only, (the first 18 days)

=Starting after the third days reduced gradually Turning & stops on 18 days.

The last 3 days leaving the embryo in preparation for Hatching.

Table (1): shows the rates of hatching eggs, chicken, turkey, ducks and geese

	Chicken	Turkey	Duck	Gees
Total duration of HATCHING	21 days	28 days	28 days	30-32 days
Length of stay in the incubator	18 days	24 days	23 days	27 Days
Length of stay in the brooder or Hatching	3 days	4 days	5 days	5 days
INCUBATOR				
Temperature C	38-37.8 C	37.8-37.8 C	38-37.8 C	37.8-37.5 C
The degree of relative humidity	60%	60%	60%	60%
Flipping the number of times	6 times	4 times	2 times of80%	2times of20%
Cooling Period	0	0	0	0
Brooder or Hatching				
Temperature C	37.4-37 C	37.2-37 C	37.5-37 C	37.4-37 C
The degree of relative humidity	80%	80%	80%	80%
Flipping the number of times	0	0	2/ day	2/day
Cooling Period	0	0	0	0

A practical system of domestic fowl eggs:

Days from start of incubation	Task	Notes
-7 to -1	Egg storage	Eggs are collected each day to allow a large batch of eggs to be set at one time.
-1	Fumigate	Bacterial contamination of the shells is reduced.
0	Set eggs	Eggs are placed in the incubator
6	Candle eggs	Inspection over a strong light allows clear eggs to be rejected ,clear eggs are either infertile or have had early embryo mortality
18	Transfer eggs to Hatcher	This coincides with a large change of environment conditions for the hatching eggs
21	Take away hatchings	Each chick is inspected for viability and possibly the males and females are segregated.
22	Discard any remaining eggs	Late hatching chicks are not likely to be viable.


Egg size





Gabbard Farms



A photograph showing a large white egg in the center, surrounded by several smaller, speckled quail eggs. The text is overlaid on the white egg.

**Comparison
of coturnix
quail eggs to
the egg of an
average size
chicken.**





