

# **hatching and management of hatcheries**

## **Treatment of eggs after arrival to hatchery:**

**Lecturer's name**

**Assist. Prof. Dr Nidhal A. Mustafa**

**stage 3**

**2022-2023**

## Treatment of eggs after arrival to hatchery:

Different methods of eggs treatment in hatcheries depending of the following:

1 - **Put eggs after arrival the hatchery:** depending on the **number** and **capacity of incubators and hatcheries**, according to the following:

A - Eggs that will be incubated within **1-7 days**, must exposed to about **15-17 °C** temperature and **70% humidity**.

B - If the duration of storing eggs extends more than **a week**, the offering temperature must be **12-15 °C** and humidity about **75%**.

Must do the following:

**1-reduce the impact of the length of storing hatched eggs to reach of good results by turn the pointed end of eggs to the top instead of the wide, to reduce exposing the surface of evaporating and keep away the air sac (located in the wide surface), also to keep away the germinal disk which is located at the top of yolk close to air sac from the impact of changes of atmosphere, you must return the eggs to intact position the wide side to the top when incubated them.**

**2- While keeping eggs for a long time it was placed wide side to the top then must turn the eggs every day to prevention the sticking blastoderm with eggshell membranes.**

2 – The **incubated eggs** must transferred from cooling room to the **sorting room, good eggs are sorted**, either manually in small hatcheries, or by staging machines in large and modern hatcheries, which **excludes eggs less weight of 50 g or more of 70 g, abnormal, broken and cracked eggs, dirty eggs.**

3 - **Eggs are fumigated for an hour** (the same way in storage room fumigation).

4- Prefer to pre-warming the incubated eggs in a room **at 28-30 °C** temperature at least **two hours** before transferred to incubators so as **embryos not affected to suddenly change in temperature.**

## **Fourth: Treatment of eggs in incubators:**

1 - Must applying the instructions of incubators and hatcheries manufacturer when you run it and adjust the temperature, ventilation, turning and humidity, preferably put eggs in the incubator of **equal weight**. almost to allocate hatchery for **large eggs** a **slight increase in temperature and a slight reduction of the moisture** , and hatchery of small eggs in size will be treated to **reduce the heat** slightly and a slight **increase of moisture**, in this way can we get the best results of hatching.

- 2 - Some hatcheries used to check egg trays by candling after **6-9 days** of eggs incubating, also eggs examined again when it transferred to hatcheries at the **end 18 days** age, the purpose of candling for knowing the **rate of fertility** in the breeder stock that produced eggs, to find if there were problems, or to find out the problems of the previous egg storage or incubators and hatcheries.

\* In small hatcheries eggs are sorted all batches, eggs that have been incubated after 5-7 days to the exclusion of non-fertile eggs and resort to sell as table eggs.

- 3 - Incubators are fumigated **once every 6 days** to **eliminate any germs**, and shall not be incubated at the time when eggs had been incubated 24-96 hours because formalin affects the vitality of embryos and causes high percentage of dead embryos, the way evaporation as follows:
  - A - Chemicals fumigation percentage: 35 ml formalin, 17.5 g potassium permanganate and 50 ml of warm water / 4 m<sup>3</sup> of incubators and hatcheries.  
size or any other fumigate like fumespor ....
  - B - After placing the container within the fumigation of incubators and hatcheries are empty upper air vents closed for 10 minutes and then open the vents to leave the steams for 20 minutes.

- **Fifth: Treatment of hatching eggs in hatcheries:**
  - 1 - Move the eggs at the end of 18 day to hatching machines, which cleaned and fumigated then eggs batch transfer directly to the hatchery, also eggs fumigated by putting (1% formalin or Verkon-S in water of humidity) the purpose of :
- **-Sterilized the air in hatcheries, which will hatched chicks begin to breathe the air and it may also killed any microbes that may be present, fearing to attack the chicks after hatching.**
- **- Also due directly on healing and drying the navel thus prevents the occurrence of inflammation of the navel fluff.**
- **-As well as gaining chicks yellow in color.**
- Followed by evaporation in the following ways: works to **increase the humidity** in hatcheries to **80-90% or more if the shell be too thick,**



## **Sixth : Treatment of chicks after hatching:**

1 - Chicks must hatched on the end of 21 days (chicken eggs) are usually left inside the hatcheries 6-12 hours as spear time again until it be **dry and all chicks hatched**, then chicks move the drawers into chicks to sorting room the temperature must be at least 32 °C and humidity 70%, where is good chicks sorted and safe for breeding, while exclude invalid chicks (disabled – very weak and small size - contrary to the weight or the type and color - which shows the inflammation of the navel, or vent blockage... etc), also chicks naturalized or sexed (separated males from females) if needed, then chicks packaged in cartoon boxes for transfer them to rearing in fields.

2 - Advised to take from each hatched batch samples (at least 5-10 chicks from each hatchery) then sent to a veterinary laboratory for specialized testing and confirming they are free from salmonella or other pathogens and ELISA testing for newcastle (ND) and Gumboro (IBD) diseases.

- 3 - If necessary, transfer the chicks to the far distances must work barriers circular inside each box (plastic or carton), must opens a number of holes in the walls of box at hot weather, and a few in cold weather.
- 4 - New carton boxes used to transport chicks to rearing fields.
- 5 - Hatched chicks must be sent to the fields in a short time, noted that chicks that delayed in distribution may clogging the vent as a result of the high temperature and lack of humidity in, leads to drying the abdominal yolk then prevents intestinal secretions and blocked the vent after then chicks deaths after 2-5 days.

- 6 - It must be emphasized that there is appropriate ventilation and temperature in vehicles (cars or trucks) especially if the transport over long distances, and in the hot summer months should be left a distance of not less than one meter between the roof of the vehicle and the top of cartons in loaded vehicle.

7 - Should regulated the distribution of chicks and transfer it after packaged them in the early morning, and warns of the chicks transfer at afternoon time, if chicks were shipped by airplane must ensure that there is air conditioning placed.

- **Eggs in ovo injection and its effects on the future of broiler performance:**

The modern technology has been able to manufacture machines injected eggs hatching (in ovo injections). This has become a multi-purpose machines are:

1. An injection against the disease on the embryos inside the incubator is called in ovo vaccination, the speed of the machine approximately 50,000 eggs / hour, vaccines against Marik , Newcastle and Gamboro ect. diseases, usually vaccination in the eggs uses at age 18 days (at hatchers), machine injection contains needles penetrates egg shell from aside of air sac the vaccine inject about **(0.1 ml dose)** and then close the hole by paraffin wax or tape then transferred to hatchery hatcheries for keeping the last three days before hatching.

2. Early nutrition of the embryos inside the egg with liquid vitamins and minerals or sugar solution as a source of energy needed leads to increase the proportion of hatching on the other hand increasing hatched chicks weights, then increasing marketing weights (at 35 or 42 days). Recent studies have confirmed that (**Early Nutrition**) of chicks will lead to the following:

- A - Speed up the absorption of yolk sac and reduce the yolk sac infection and navel inflammation of chicks.
  - B - Speed up the process of digestive system and immune system and thermoregulation development.
  - C - Reduce chicks mortality during the first three days of age has been proven that most mortality caused by hunger and thirst.
  - D - Prevent dehydration of hatched chicks, because early feeding speed up the absorption of egg yolk fat would lead to the production metabolic water.
3. The use of injection inside the egg transfer to vital boosters or Probiotic for embryos at early age.

