







# Instructions for use

## COVATUTTO 12 ECO – COVATUTTO 16

### DIRECTIONS

This incubator has been created to provide an ideal condition, so that the fertilised eggs placed in can continue their embryonic development, which already started before they were laid, up to the little chicken birth.

In order that this can happen, it is essential to remember the focus is to be on the egg, i.e. the most important subject.

In order to obtain an excellent birth percentage, you need to concentrate on the eggs fertilisation as well as whole following cycle, i.e. from the egg formation to the laying, which is why you are invited to pay attention to the following directions:

- Please do not use eggs that are normally on the market for feeding purposes. Instead it is highly recommended to use eggs collected from poultry pens, where sexually mature, healthy and well-nourished animals live, not too young or too old, considering that the male number shall be proportional to the female one, in order to obtain a good percentage of fertilised eggs.

Please below find a table, which you are advised to follow in order to reach satisfying results:

egg type	Sexual maturity		Proportion between	
	male	female	males N°	females N°
QUAIL	60 days	50 days	1	3
HEN	6/8 Months	6/8 Months	1	10
GREY PARTRIDGE	10/12 Months	10/12 Months	1	1
HEN-PHEASANT	6/7 Months	6/7 Months	1	7
GUINEA-FOWL	8/10 Months	8/10 Months	1	2
DUCK	8 Months	4 Months	1	4
TURKEY-HEN	7 Months	7 Months	1	10
GOOSE	8 Months	7 Months	1	4

- Avoid crossbreeding consanguineous animals, for they could beget eggs containing weak embryos that inevitably will die.
- Accustom animals to lay eggs into their own nests and not on the ground. This will prevent the eggs to get dirty or infected. Place the nests in the shade and keep them clean.
- The most fertile time for animals is inevitably the most luminous time of the year, i.e. from February to October. Also, you need to pay attention to the environment temperature, which shall not be less than 16 °C or more than 24 °C, while the relative humidity may vary from the 55 to 75 %.
- It is important to avoid exposing the laid eggs directly in the sunshine or in very hot places, for germination is starting inside them, which is interrupted conservation point necessary before their incubation.
- Eggs shall be collected four times a day, with clean hands, and placed on suitable trays and their point turned downward. Should the temperature be too high or too low, you advised to collect eggs every hour.
- At the end of each day, you are kindly advised to collect all the eggs left, avoiding leaving them in the nests during night; moreover, you shall close the access to the nests and reopen it very early in the morning, before the new laying.

- Eggs shall be collected just after the laying without shaking them or knocking one another and shall be selected according to their size, shape, weight and shell porosity. The eggs shall be of medium size (neither small nor big ones), not too tapered or rounded, with little porous shell and possibly looking similar one to the other. They need to be cleaned avoiding in the use of water.

Tapered or too rounded eggs might lead to weak chicks, whereas the ones with wrinkled shell shall be excluded as they contain too much calcium and humidity together with heat will harden them, thus preventing the embryo from developing regularly and consequent death inside the shell.

The birth percentage decreases using this kinds of eggs.

The selected eggs shall be placed into the apposite well cleaned egg trays (available anywhere) with the point down and kept for at least 24 hours in a room at a stable temperature ranging of 15°-18 °C with a relative humidity between 70-75 % before they can be placed inside the incubator.

In order to get a good result, it is important not to preserve the eggs for more than 5 days since they were laid.

Please not that the fresher the eggs are, the more the hatching is regular, and therefore the hatched chicks are healthy and robust.

You should use eggs laid more than 5 days before, incubation is likely to be compromised and may result with the following:

- 1) No hatching occurring and unborn chicks dying inside the eggs.
- 2) Embryos will not become mature enough.
- 3) Hatching will occur late and irregularly, consequently chicks will be very weak or misshapen.
- 4) Some hatched chicks might succeed in making a hole in the shell but they usually remain trapped in the eggs as they are too weak.
- 5) "Bright eggs" might be in large amounts when the germ is too old and does not develop.

It is known that old eggs are the main reason for birth decrease.

Incubation is often irremediably compromised by the ones who want to preserve eggs for more than 5 days since they were laid, just to collect enough of them to fill the incubator.

In conclusion, before incubating the eggs, 24 hours shall go by, not more than 5 days since they were laid, as previously advised.

## EGGS TO BE PUT INTO THE INCUBATOR

Shape, size, weight of eggs suitable to be put into the incubator, incubator indicative capacity.

EGGS TYPE	Indicative measures Diameter x height mm	Indicative weight gr.	Indicative capacity covatutto 12 ECO covatutto 16 N°
QUAIL	25x30	11	42
HEN	40x50	45	16
"	43x50	53	14
GREY PARTRIDGE	30x40	12-14	26
HEN- PHEASANT	35x46	30-35	19
GUINEA-FOWL	35x49	45	18
"	38x49	50	16
DUCK	46x60	70	11
"	46x65	75	10
TURKEY-HEN	46x66	70	10
"	50x70	85	8
GOOSE	65x100	120	4
"	68x106	140	4

## WHERE TO PLACE THE INCUBATOR

We recommend that you choose a room where the temperature is stable, not lower than 16 °C (otherwise it would lower the incubator temperature) and not higher than 26 °C, even though the incubator can still work with a temperature of 31 °C.

Humidity shall be between 45-55%, free of smells, well-aired, and not dry, without leaving windows or doors open as they could cause draughts, harmful for the incubated eggs.

The room shall be dimly lit, and the incubator shall be put on a wooden and solid base. The incubator shall not be placed next to direct sources of heat, as they may alter the inner temperatures. No animals, neither the hatched ones, shall be allowed inside the selected room. No washing operations shall take place near the incubator, otherwise water jets may deteriorate the insulation and cause electrocution (electric shock).

## PREPARATION AND START OF INCUBATOR

Before starting the machine, you are strongly advised to read all the instructions.

Use the machine for the above-mentioned purpose only, if used for other purposes it is considered to be dangerous and the Manufacturing Company declines all responsibility for eventual damages to people, animals or things resulting from inobservance of this warning.

Remove the machine from its packaging and make sure nothing is missing or damaged. Do not dispose the packaging in the environment. Keep both the machine and the packaging out from the reach of children, minors and animals.

Ensure all its parts are well fastened and in the right place and then, before reassembling them, check the machine name plate data and make sure they are suitable for the rated mains voltage and the available power.

1) Provide the incubator with all the equipment in the box ( see following indications). As for " COVATUTTO 12 ECO" the thermometer is already fitted (see figure1), whereas for "COVATUTTO 16" we advise to check that the thermometer magnifying glass corresponds to the reading scale, before removing it from its package. Differently, turn the top part of the thermometer until it is needed by holding it firmly through the two

holes in the bottom of the package (see figure 2)

2) Separate the bottom from the main unit and pour some tepid water in the main basin (see figure 3), then put the machine back together and place the transparent cover properly.

3) Now that the incubator is closed and no eggs are inside, fit the thermometer in and plug it in. Wait for 3-4 hours, until the lamp, which stays originally lit, starts blinking as to advise the internal temperature is starting to stabilize (see figure 1). Wait for about two hours and then check the thermometer scale: the liquid should be approximately on the red line or 100°F, without necessarily matching with it (see figure 4). You may vary the temperature only if the liquid stabilizes itself two lines under or above the red one or 100°F. After completing "PREPARATION AND START" phase to point 6, you may vary the incubator temperature, if necessary, by following the instruction described in the paragraph "THERMOMETER AND TEMPERATURE CONTROL".

4) With a pencil, draw a mark on the egg (see fig. 5) so that to have a point of reference for the egg's rotation. Remember! Always unplug the incubator from the main socket before opening it. This will prevent temperature jolts. We anyway recommend that you open the incubator only when it is necessary and for very short times.

5) When the internal temperature has finally stabilized and the thermometer liquid will be approximately on the red line or 100°F, remove the transparent cover and place the eggs into the incubator (see figure 6), avoiding overlapping them and ensuring the pencil marks are well visible.

6) Close the incubator by placing its cover properly and check the temperature on the thermometer after 6-8 hours, the liquid should still match the red line/100°F. If after other 10 hours functioning the temperature has not reached the required level yet, you will need to vary it by following the instructions reported in paragraph "THERMOMETER AND TEMPERATURE CONTROL".

Now the incubation cycle is ready to start. It is therefore good use to sign the incubation starting day on a calendar and pay attention to the following instructions.

## **BIRTH RULES**

A) Freshly collected eggs shall be kept 24 hours with their point looking downwards in a cool place with a temperature ranging between 15°C and 18°C.

B) Incubate eggs lay no longer than 5 days before, with regular shape and weight.

C) Turn the eggs half twice a day with care (morning and evening), paying attention to rotate the pencil mark from top to bottom (see figure 5). Furthermore, while turning eggs we recommend changing places too, following a rotation cycle in respect to the lamp and from centre to periphery when it is needed. In this way, all eggs can equally use the same temperature during the whole incubation time.

This operation can be carried out manually, by removing the cover, which will need to be put back in the same position as shown at point 6. Check that the liquid in the thermometer has reached the red line/100°F every time you turn the eggs. A slight liquid variation in respect to the red line/100°F will not affect the function especially if caused by the birth of the first chicks.

D) Had tepid water into the basins about every two days.

! The operations (point B-C-D) shall not be carried out in the last 3 days before the hatching; the water shall be therefore put at the right level immediately before the 3-day-hatching begins. In fact, during this span of time, the incubator shall not be opened, otherwise the birth would be compromised. Where the weather is very dry, water can be put in a bigger basin, just 3 days before the chicks' birth.

E) If eggs to be incubated are not enough to fill the egg-holder unit, they shall be always arranged on the base proportionally and not be concentrated in the middle or at the sides, so that to balance air and circulation.

F) By the sixth-seventh day eggs can be "candled" (not indispensable), in order to remove the unfertilised ones.

This operation shall be carried out inside a dark room, lighting the egg from the side opposite to the point, which will keep being turned down, using a bright light torch or the proper "egg-candling" device.

When a little red spider alike shape is visible inside the fertilised egg and it oscillates in case of little shocks, it contains a developing embryo.

Other visible shapes different from the above-mentioned ones, are equal to unfertilised eggs or eggs containing dead embryos, to be therefore removed. The remaining eggs shall be arranged in the drawer as previously specified.

G) In case a duck and goose eggs are incubated, the incubator shall be opened (removing the transparent cover) daily starting from the ninth incubation day and the eggs shall be let getting cold for 15- 20 minutes. After that, before closing the incubator to continue the incubation, the eggs shall be moistened with tepid water by means of a nebulizer or a sponge. This operation is to be avoided during the last three days preceding the hatching.

H) After the hatching, chicks shall remain inside the incubator for about 24 hours to dry themselves, then they shall be put in a hot place, in the apposite heated cages or under a heater equipped with an infrared rays lamp. From the moment when the heat is enough, chicks will not frenetically crowd and move away

from the heat source, either. They shall be watered and fed with a proper trough and feed, available in specialized shops. It is good custom do not disturb the new born chicks, as they consequently would disturb the ones about to be born, thus temporarily altering the conditions inside the incubator.

I) At the end of incubation, clean the incubator with a moist cloth and as well as with tepid water, where it is possible. Avoid using other unspecified liquids and cleaning devices. Dust can be removed with a gentle air jet, bearing in mind to unplug the machine before carrying out any cleaning operation.

### **USEFUL INSTRUCTION**

A) If it is possible, do not incubate eggs of different species or with different hatching terms. In case of strong smells during the hatching, followed by the chicks' death, you shall clean the incubator with a damp sponge, carefully avoiding putting water on the electric parts and especially after unplugging the machine.

B) Should the transparent cover mist up and as a consequence small drops appear during incubation, you shall lift the cover up for few minutes to let the internal humidity stabilize itself (see figure 1). Differently, hatching will not be compromised if some condensed water will appear on the cover in the proximity of the basin. By hatching time instead, it is normal that the cover gets wet, therefore do not open the incubator, otherwise the humidity degree decreases.

C) Should electric supply fail for some hours, incubation is not compromised, as long as the incubator is not opened. In the case electricity is not supplied for more than 5-6 hours, as last attempt, move the incubator to a quite warm room: leave the door open, so that the eggs can cool as little as possible.

### **AT THE END OF INCUBATION**

After each incubation the state of the eggs eventually left, shall be checked. For this purpose "candle" the eggs or break them, remembering the weak germ develops but might not be able to ripen and hatch.

### **THERMOMETER AND TEMPERATURE CONTROL**

The thermometer is already installed on "COVATUTTO 12 ECO" (see figure 1). The temperature control thermometer of "COVATUTTO 16", instead, shall be put in its apposite set. It is covered by a transparent anti-shock and magnifying glass, to help checking the temperature. In case the thermometer reading does not correspond to the one on the magnifying glass, turn the outer party of the thermometer as much as it is needed, by keeping the thermometer base steady through the two gaps in the bottom (see figure 2).

The thermometer the machine is equipped with is used for checking the internal temperature only, which will be completely right only when the liquid inside the thermometer has reached the red line corresponding to 100°F.

After starting the incubator, when the lamp starts blinking and optimal incubation temperature has been reached, you can check the thermometer and increase or decrease it by turning the regulating screw with a small screwdriver (see figure 7). To simplify this operation, please refer to the lamp which is initially lit and starts blinking only when the incubator temperature reaches the value preset before. To increase temperature, turn the screw clockwise and wait for few minutes from the moment in which the lamp starts blinking. Let the temperature stabilize itself and repeat the operation until the thermometer liquid reaches the desired value on the thermometer scale. We recommend this procedure only when it is necessary and with extreme care.

For this reason, please check the thermometer before the incubation and that the liquid inside it has not separated due to eventual collisions during transportation. The thermometer is functional when the liquid in the capillary is compact and homogeneous, starting from the bulb which is situated on the edge (see figure 8). When the liquid is broken, the thermometer needs replacement.

### **WARNINGS**

During incubation, if the lamp is off or on without blinking, the temperature indicated in the thermometer will not be right, therefore it will need regulating, after assuring that everything is safe. Differently, you will need to switch the incubator off and contact Novital or an authorized Maintenance centre.

If the incubator is equipped with a mercury type thermometer, i.e. the liquid inside is silver colour, in case of bulb breaking and consequent mercury loss, please follow the instructions below:

- collect the mercury in a glass or plastic container with hermetic plug and send everything to NOVITAL for disposal.
- the machine is an electric device, therefore never touch it with wet hands or barefoot.
- The machine is conceived for inner use only, water jets might result in an electric shock.
- Avoid using improper extensions, do not wet connections, and do not damage the feeder, which has to be protected and away from the reach of animals.
- The machine shall definitely never be used in dangerous places, where saturation with inflammable gases may occur or where it may get in contact with several liquids or inflammable substances and liquids.
- Cleaning and maintenance of the machine shall be done with cloth or/and brush without using tools or liquids. Dusts can be removed with a gentle air jet, just after unplugging the machine.

Maintenance shall be limited to the usual periodic inspections (before the use) of the moving parts and of the feeder, in order to check if they are eventually damaged or worn. Should the machine be damaged, it shall not be used.

- Other cleaning and/or maintenance operations shall be carried out by qualified personnel of an authorized Service Centre or NOVITAL only.

- Do not move the machine by pulling its feeder and always unplug it before moving it, anyway.

- For eventual repairing, feeder replacement included, apply to qualified personnel at an authorized Maintenance Service Centre or NOVITAL only.

- Replacement for the heating lamp has to be performed exclusively by qualified NOVITAL personnel or an authorized Maintenance centre. Assure the machine is unplugged before carrying out this operation. The new lamp has to be of same sort and needs to be fixed properly.

- As it is an electric device, in case of fire, use powder fire extinguishers. Never use water in order to avoid the occurring of electrocutions.

- Should the machine be declared as out of order, it needs to be dump in an authorized tip. Hence, it shall firstly be made idle by cutting the feeder as much close as possible to the machine output point, after unplugging the machine itself.

INCUBATION TABLE		
Egg species	Incubation days no.	Egg rotation
QUAIL	16-17	From the 1 <sup>st</sup> to the 14 <sup>th</sup> day
HEN	20-21	From the 1 <sup>st</sup> to the 18 <sup>th</sup> day
GREY PARTRIDGE	23-24	From the 1 <sup>st</sup> to the 20 <sup>th</sup> day
HEN-PHEASANT	24-25	From the 1 <sup>st</sup> to the 21 <sup>st</sup> day
GUINEA-FOWL	26-27	From the 1 <sup>st</sup> to the 23 <sup>rd</sup> day
DUCK	27-28	From the 1 <sup>st</sup> to the 25 <sup>th</sup> day
TURKEY-HEN	28-30	From the 1 <sup>st</sup> to the 26 <sup>th</sup> day
GOOSE	29-30	From the 1 <sup>st</sup> to the 27 <sup>th</sup> day