

# PLEYSIER INCUBATORS cc

COMPANY REG NUMBER: Z061696660019  
VAT REG NUMBER: 4290232802

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## **THE ARTIFICIAL INCUBATION OF EGGS FOR BEGINNERS:**

It is your fault if the perfect egg does not hatch in an incubator where the temperature, humidity, turning method and airflow was correct.

## **PERFECT EGGS:**

What is a perfect egg?

A perfect egg is an egg that was laid by unrelated parents, without diseases; the correct breeding food was given and the appropriate nesting conditions.

Most exotic birds in South Africa have been bred from imported parent stock, and are all very much related, the result is that you get weak chicks that die either in the shell, or shortly after hatching, that is not the fault of the machine.

If the parent stock is diseased, this disease can be carried through and infect the eggs, this is also not a fault of the machine.

## **THE CORRECT FOOD:**

You have to work with nature.

There are four seasons in nature; there are seasons of plenty and seasons of many insects, and seasons of no insects. Just before the breeding season, there is an increase of insects that means by that time, you have to increase the protein content and mineral content of the normal food that you are feeding. Add "stress pack" with your normal rations.

After the breeding season, the parent stock should loose weight, feed them just the maintenance food.

You must de-worm them properly and the youngsters that you are raising make sure that you are giving them the correct food.

Also check that during the breeding season you are not throwing the food on the same spot in the camp all the time, because it could be full of droppings, fungus, and old rotten food.

## **TEMPERATURE:**

Make sure that you know what the correct temperature is for incubation for different types of eggs.

For ostriches and emus the temperature is about 1 degree lower than for chicken eggs.

This temperature is 36, 2°c for ostriches and emus.

The temperature for chicken eggs is 37, 3°c.

The temperature is higher for smaller eggs, like for instance budgies and finches; their incubation temperature is 37, 7°c.

Make sure that the temperature inside your incubator is the same as what it showed on your test thermometer, your digital thermostat, or the little dial that you bought at the hardware shop.

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## Temperature continue-

Very, very often you get the result that the eggs don't hatch in the incubator, because the inside temperature is two degrees or three degrees higher or lower than the actual temperature that you want.

Digital incubators have to be calibrated, that means it can show a temperature of 40°C inside as 37, 3°C on the outside, no eggs will hatch in that machine and it is your fault for not calibrating it.

The best way to check the temperature in your machine is to buy four "clinical thermometers"; these are the little thermometers they put under your tongue when you are not feeling well.

It is no use putting them directly into a machine without covering the mercury bulb with plasticine clay or putty, because if you don't cover it with plasticine clay or putty it will only show you the spikes and the highest temperature that might be in your machine for a few seconds.

That is not correct; you want an average temperature that is why you put a ball of 20 mm putty around the mercury bulb of the clinical thermometer. You leave that in between your eggs for approximately one day for the whole machine to stabilize out, then you take them out and you measure or you read that temperature, that temperature is usually correct.

After that, you can see by how many degrees or points of a degree your digital thermostat is incorrect or your alcohol thermometer is incorrect, you can adjust accordingly.

In case your incubator is using mercury contact thermostats, which is still one of the best thermostats ever invented, you are responsible for checking that it hasn't split and stop and switches on and off at a higher temperature than what is necessary.

Digital thermostats can be out by as much as 9°C above and 9°C below the actual temperature inside the machine.

Alcohol, glass and plastic thermometers can be up to 1°C out.

## WHAT NEXT?

Now there are problems!

The glass thermometer is wrong.

The digital thermometer can be 9°C out.

The analog thermostat has been set against the wrong testing thermometer.

The contact thermostat has been bumped and works to high, this is exactly when you start blaming the incubator manufacturer, and you say that his incubator is no good.

That is not so. It is entirely your fault. You have to check the temperature inside the machine, go and buy at least four clinical thermometers and test the temperature inside the machine.

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## HUMIDITY:

There is a large variation in humidity settings for various different types of birds. However, they all have one thing in common, that is a 15% weight loss during the incubation time before the bird pips.

So, if you increase the humidity the egg will loose less weight because it cannot get rid of its water, and the end result would be a bird that is fat and plump and does not hatch. It hasn't got the strength to pip. Or it drowns in the egg shell.

The other problem is if the humidity is too low, some of the chicks are stuck in the egg shell because there is not enough humidity to have the membranes soft so that it can turn around. Then it also dies.

How to check the humidity;

In our brochures all the instructions of our machines have the humidity's for various types of birds in hatches.

## THE WET BULB METHOD:

You must first know what a wet bulb thermometer is.

It is a normal thermometer that has been pushed into a "wick" or cotton wick or otherwise a shoe lace that is emerged in water, so that the water evaporates on the bulb, when water evaporates; the temperature is colder than inside the machine.

The wet bulb thermometer reading is not the relative humidity.

A wet bulb thermometer reading of 29, 5 degree centigrade is 55 percent relative humidity.

A wet bulb reading for 24 degree centigrade to 26 degree centigrade is a wet bulb reading for a humidity of between 30 and 40 percent.

Do not confuse the temperature of the wet bulb with the percentage humidity.

We have charts in every instruction manual that goes with the machine.

## DIGITAL HUMIDITY CONTROLLERS:

Digital humidity controllers must also be calibrated, they are not correct when you get them from the factory.

The factory assumes that you are intelligent enough to know that.

Most people unfortunately assume that it is correct, and they are not correct, you have to calibrate them against a wet bulb thermometer.

Usually, it is not always the case, usually in a "Hatcher", which is not the same machine as an incubator or a setter, in a Hatcher the humidity is 10% higher and the ruling temperature is 0.8 degrees lower than the incubation temperature.

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## TURNING METHODS:

All eggs can be incubated successfully in a rolling method.

However, in machines you have to watch out that they don't end up with the sharp end pointing up because then you will have bridged chicks.

But, not all eggs can be incubated in a tilting method, most eggs can, however you can roll most eggs in a tilting machine if you pack them with their sharp ends and their blunt ends parallel to the tilting axes. That means in the length of the tilting tray. Then you have the same as a 90 degree tilting action.

For old, primitive type eggs like Emus and ostrich a 90 degree tilting action is absolutely sufficient and should have between 80 and 84% hatch rate.

However, if you do it in a laboratory and you are doing one egg per time and watching the percentage weight loss as well as the rolling temperature and you monitor one egg at a time individually, then you can get up to 90% hatch rate. The other 10% is where the chicks would have died in nature anyway.

Emu eggs hatch perfectly in a tilting incubator.

However they have to be packed parallel and flat to the turning axes.

The reason for this is that the blunt edge and the sharp end of an Emu egg, the difference is not very visible, and very often people put them upside down in the machine then the air sack is at the bottom and this Emu chick will drown in the last week.

That is not the fault of the machine, it is your fault.

An easy way to see whether Emu eggs are definitely alive on round about the 40th or 50th day is if you float them in a bowl of water which is at approximately 33 to 34 degrees centigrade. These eggs will then dance or jump around, but those that do not dance or jump around is not to say that they have died, it is just that they are not moving yet.

Do not throw them away.

## CORRECT AIRFLOW:

There is a difference in airflow requirements in machines that are hatching or incubating Emu eggs, duck eggs, geese eggs and finch eggs.

With small eggs they take a short while in the machine, so a reasonable amount of oxygen and airflow through the machine is sufficient.

However, with big eggs like Emu eggs and ostrich eggs these eggs take far longer to hatch and at the end of the hatching period they need more oxygen because the chick is starting to breathe inside the egg even though it hasn't piped yet.

With all our machines we put in an additional airflow so that more oxygen is absorbed in the latter stages of incubation.

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## **COOLING-OFF PHASE:**

A Cooling-off phase is important only with certain eggs.

Most important with geese, Emus and a few other geese type wild water fowl, what they normally do is they take the egg out of the Hatcher and let it cool off for approximately 20 minutes, in the middle of the day so there is no shock to the egg itself.

What happens in a cooling-off phase is that the egg shrinks, the air sack shrinks and sucks in more oxygen, the chick can then absorb more oxygen.

It is also the time that a chick can get rid of his excess heat.

Some eggs will not hatch unless you give them a cooling-off phase, and some machines have got a cooling off phase built in with a timer.

## **THE INCUBATION ROOM:**

1. You have to see that there is enough fresh air going through the room, not a Draft, just enough fresh air. Do not close all the windows because you will take all the oxygen out of the air.
2. You have to see to it that a temperature of between 26°C to 33°C in the incubator Room. The machines cannot tolerate a temperature lower than 26°C and not a higher temperature than 33°C.
3. There must be no direct sunlight on the machine.
4. There must be no draught on one side of the machine.
5. Make sure there is only pure new air through the incubator room and not old air that comes from another incubator room or from where you are rearing chicks that can infect the eggs inside the incubator.
6. It must be fresh, clean sterile air.

## **DISINFECTING YOUR EGGS:**

1. The fumigation of eggs with formalin and condies crystals:  
You use 40% formalin solution and you pour approximately 25 ml into a whisky Glass. You take the whisky glass and you put it on top of a saucer, then you put the whisky glass and the saucer inside the incubator on the base. You then pour 1 teaspoon of condies crystals into the whisky glass, it will start bubbling and release a most poisonous gas that can make you blind. Close your incubator and close all holes and keep it on. If there are no eggs in the machine you can do this for approximately an hour and a half, do it outside the house however if there is no ventilation through the incubator room, because if you continuously look at it you will go blind and that is not my fault.

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Disinfecting your eggs continue;

However when you are fumigating the incubator with eggs inside the machine, you must fumigate for only 10 to 15 minutes. This will not harm the eggs, and then you have to put a fan in your incubator room and open the incubator and make sure that all the fumigation gasses are extracted.

2. Sterilizing your eggs with Vero Kill: only use a 1% solution and not 10%, you will then kill your eggs.

## **A FEW REASONS WHY EGGS HAVE NOT HATCHED IN OUR MACHINES:**

Nine out of ten people blame the machine for eggs that don't hatch.

The actual statistic is that nine out of ten people do it correctly and the other one out of ten doesn't know what he is doing and blame the machine.

### A few examples:

1. We had a chap in the Free State that went and bought a thousand eggs, he put it in our machine and nothing hatched. After long discussions and ducking and diving, because it was all blamed on us, we found out that he had bought the eggs at a supermarket, these eggs were previously frozen, they came from batteries and there are no roosters with those hens, so the eggs are not fertilized.

My machines can not fertilize your eggs.

2. We had a man up in TZANEEN who bought one of our machines and repeatedly he couldn't hatch an egg out of it, no eggs would hatch. He then goes sheepishly and asks the president of their poultry club what is the problem? They took twenty of his eggs and put them in another machine, also one of my machines, yet again in that machine nothing hatched, then after a week of the eggs not hatching on time, these eggs were broken open and the president of the poultry club realized that they weren't fertilized.

He said well, I better go and have a look at this mans, hens and roosters to see what the problem is. Upon arriving at his farm he said, but were are your roosters? Noticing there are no roosters in the camp. He says, "no, the hens are laying eggs anyway; they don't need roosters, what for?" Well needles to say I cannot comment on that.

3. In the Emu industry there are a whole lot of fallacies because it is a new industry and every body has his own ideas of what to do.

For instance; storing Emu eggs for 6 months, this is not possible. You must load an Emu egg as soon as you can, the longer you delay loading the egg, and the more chance there is for infection.

The egg must also not be 'handled', it must be picked up immediately and placed into a machine. You can store the eggs in a fridge at a temperature of 12 degrees, for not more than a week because thereafter some of your embryos will not hatch.