



SetCare[®]

Optimal incubation takes 24 days





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The key to successful incubation with minimal losses and maximal hatchability is to ensure optimal circumstances throughout the incubation process. It is generally assumed that incubation takes 21 days, but extensive research has proven that an incubation process of 24 days, with a very gradual pre-warming phase offers much better circumstances and superior results. Very gradual and precise pre-warming avoids unnecessary early embryo mortality. It also results in higher quality of all chicks that hatch.

- 3.3% Higher hatch of first grade chicks
- 3% Lower embryo mortality
- Overall improved chick quality

SetCare, the new HatchTech setter revolutionizes the incubation process from 21 days to 24 days, which results in an improved incubation performance.

Early embryonic mortality (4.4 %) is the highest loss of the total embryonic mortality (8.8 %). The general high embryo mortality has long been accepted by poultry producers as an inevitable part of incubation. But a closer look at natural incubation process reveals that the industry-standard of 21-day incubation, is suboptimal and that embryos die unnecessary.

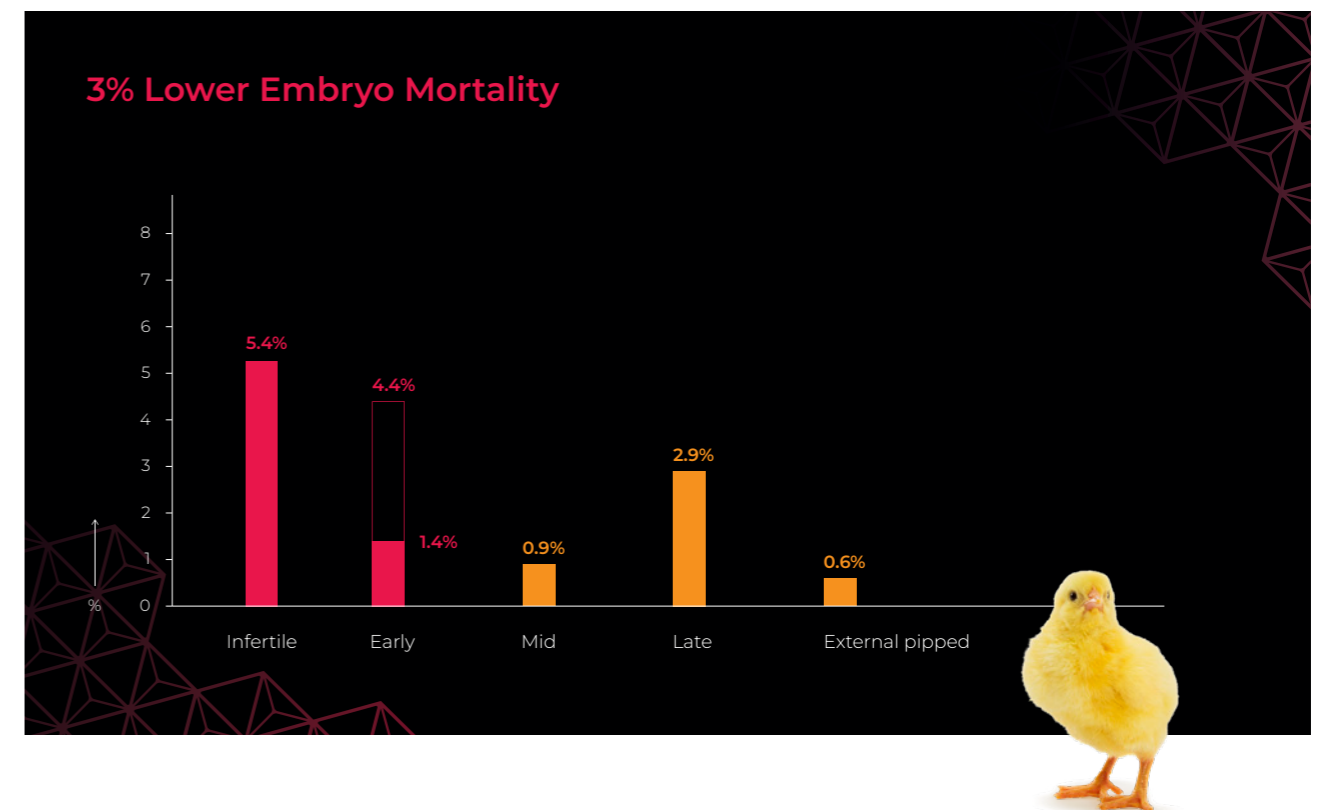
For more than 15 years, the research department of HatchTech Incubation Technology has heavily invested in studies to learn how this incubation process can be optimized and how the problem of early embryonic mortality can be solved.

Today, we have found the solution. HatchTech Incubation Technology has conducted over 50 studies in the past 5 years, learning that

the answer lies in the gradual increase in egg temperature from storage to incubation, resulting in a higher percentage of embryo cells that survive. Warming eggs extremely slowly minimizes the early deaths of embryos and therefore maximizes hatchability. This extreme slow warming stretches the total incubation period to 24 days. The results of these studies have led to the development of HatchTech's revolutionary incubation concept: SetCare.

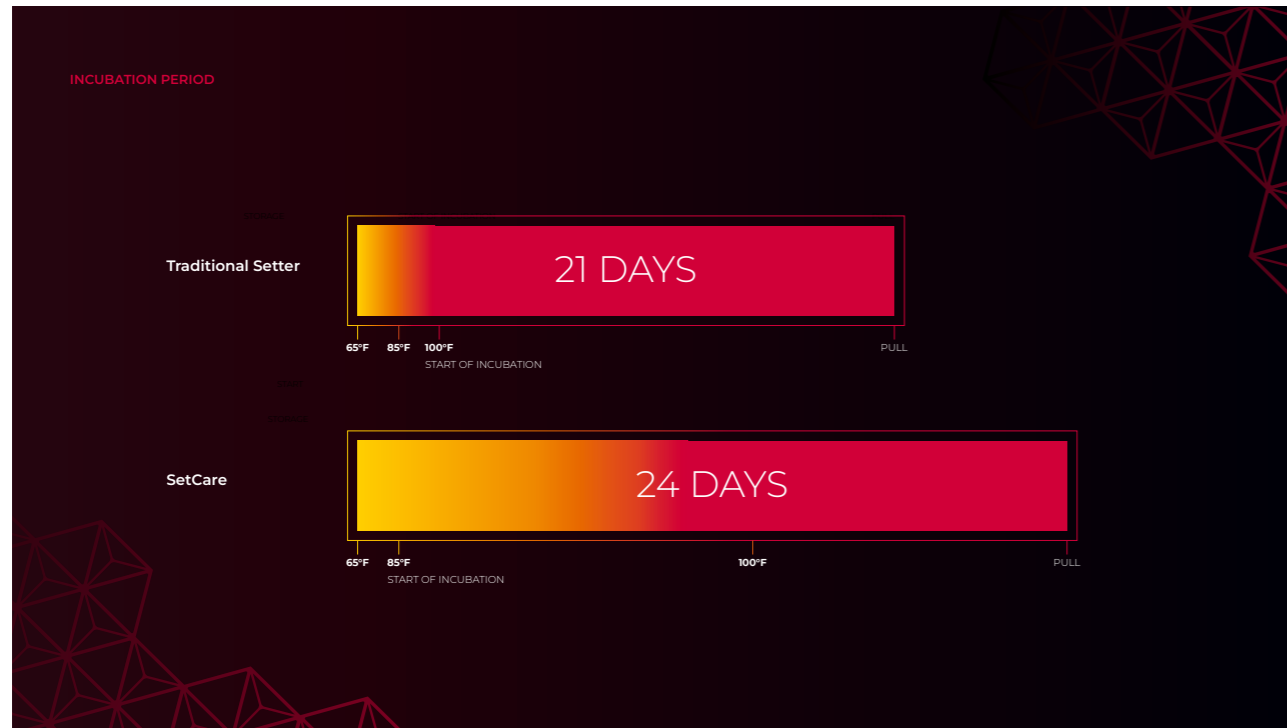
The 24-day incubation process in SetCare decreases the high number of early deaths and therefore increases the hatch of first grade chicks by 3,3% and decreases embryo mortality by 3%. In long stored eggs the benefits will be even bigger.

Besides a higher hatchability, HatchTech's research also confirms that 24 days of incubation leads to overall improvement of chick quality. These results all prove that optimal incubation of chicken eggs does not take 21 days, but 24 days.



Extreme slow warming process

3.3% Higher hatch of first grade chicks



SetCare eggs are warmed extremely slowly, with only 0.1 °F per hour. To explain the importance of this extreme slow warming process, we look at the daily practice in hatcheries. Eggs are taken from the cold egg storage room and pre-heated to an incubation temperature of 100°F.

It was assumed that this is the temperature where the embryo starts to develop, but this seems to be wrong as this overlooks embryo development below 100°F. HatchTech's studies showed that development of an embryo starts already at 85°F and that development from 85°F onwards should be done extremely slowly and in combination with high relative humidity and high CO₂.

At the start of incubation, egg temperature should be increased by only 0.1 °F per hour. To compare, in current practice eggs are warmed by approximately 1.5 °F or even more: 15 times faster than what is optimal. The extreme slow warming process stretches the total incubation period to 24 days, resulting in a 3,3% higher hatch of first grade chicks.



Proven HatchTech technology secures perfect temperature for each embryo

Incubating each embryo at the optimal temperature is the most crucial factor to achieve good embryo development and superior chick quality. SetCare makes it possible to secure this in each individual trolley of the incubator.

How does it work?

- The incubator is divided into sections, with each section containing a setter trolley and a radiator.
- Each section radiator is equipped with a temperature sensor.
- Sensor information is constantly sent to the SetCare controller.
- The controller sends out a heating or cooling signal to each individual radiator.
- The radiator in each section is cooled or heated by water that runs through it.
- Modulating heating and cooling valves make it possible to fine-tune the temperature

according to the needs of the embryos in each individual trolley.

- Pressure differentials move air through the perforated holes in the radiator.
- As the air moves through the radiator, it is conditioned to maintain the correct temperature for the embryos in that section.

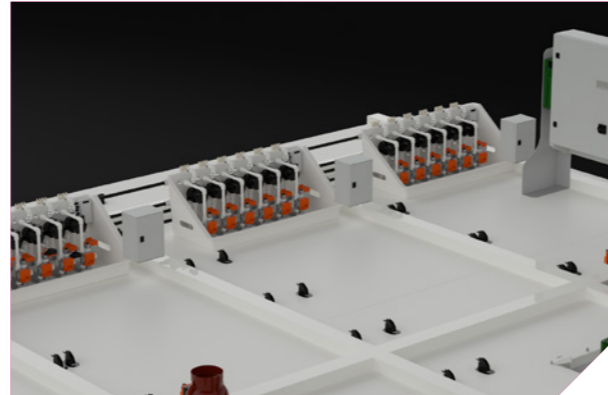
SetCare constantly controls the temperature in an extremely fine-tuned way. This ensures a perfect temperature for every single embryo.



CO₂, O₂ and humidity Precision control

To realize the extreme slow warming process, the temperature of the air in the incubator should be controlled precisely and must be uniform within the entire machine. This uniformity within SetCare can only be achieved if heating and cooling are controlled per setter trolley. If not, the benefit for the embryo is lost and early embryo mortality cannot be prevented.

SetCare is specifically designed to provide this precision control, with radiators containing highly sensitive temperature sensors positioned next to each trolley. Each radiator in SetCare is equipped with a pump and a modular valve for hot and cold water, ensuring precise temperature control for each individual setter trolley.



To compare

Feature	Traditional Setter Non HatchTech	SetCare HatchTech Incubation Technology
Incubation period	21 days	24 days
Temperature control	Machine level	Trolley level
Early embryonic mortality	Industry standard	Minus 3%
First quality chicks	Industry standard	+3,3 %
Chick length	Industry standard	+0.2 cm
Gas-sealed design	No	Yes
Glass doors	No	Yes
SPIDES integrated in Setter	No	SetCare
Laminar Airflow	No	Yes
Uniform Embryo Activator	No	SetCare

Gas-sealed incubation

Excellent heat transfer



To further optimize the incubation process, SetCare is supplied with glass gas-sealed doors. In the first stage of incubation, relatively high humidity and a uniform temperature is required to transfer heat to the embryos. The quality of this humidity is of crucial importance; the smaller the moisture droplet size, the better and more uniform the total heat transfer capacity and distribution will be. In gas-sealed incubation, moisture that is lost from the eggs is retained inside the incubator. This moisture has a naturally small droplet size that creates the excellent heat transfer environment that is necessary for uniform and optimal, early embryonic development. SetCare ensures perfect gas-sealed incubation.



Technical Specifications

SetCare 88-Series				
SetCare	SC168960	SC126720	SC84480	SC42240
<i>Capacity</i>				
Eggs	168.960	126.720	84.480	42.240
Trays (88 eggs)	1920	1440	960	480
Trolleys	24	18	12	6
Eggs/m ²	4582	4557	4496	4322
<i>Dimensions</i>				
W x D x H (m)	5,40 x 6,79 x 2,74	5,40 x 5,14 x 2,74	5,40 x 3,48 x 2,70	5,40 x 1,83 x 2,70
SetCare	SC200640	SC150480	SC100320	SC50160
<i>Capacity</i>				
Eggs	200.640	150.480	100.320	50.160
Trays (88 eggs)	2280	1710	1140	570
Trolleys	24	18	12	6
Eggs/m ²	5441	5412	5339	5132
<i>Dimensions</i>				
W x D x H (m)	5,40 x 6,79 x 2,74	5,40 x 5,14 x 2,74	5,40 x 3,48 x 2,70	5,40 x 1,83 x 2,70
<i>Sensors</i>				
Temperature	24	18	12	6
Humidity	1	1	1	1
CO ₂	1	1	1	1
<i>Humidification</i>				
Turning	U-Vaporator™			
Cooling and Heating	Individual per trolley			
UMS™	Standard			

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