

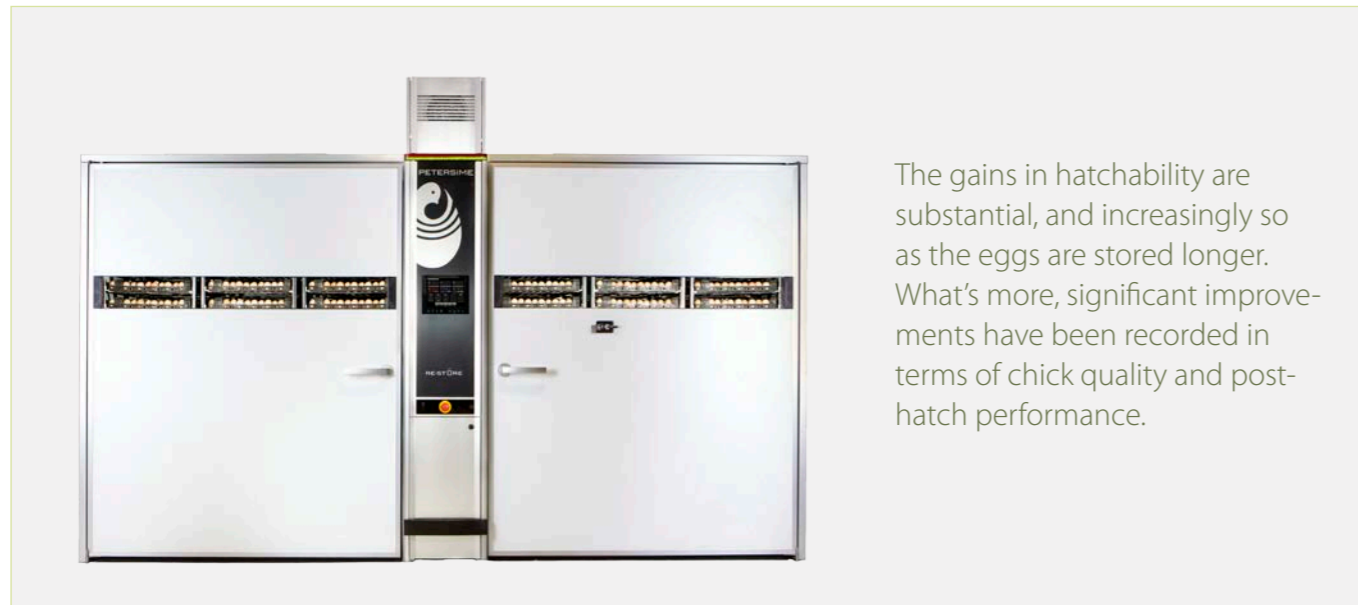


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start maximizing your profits



BioStreamer™ Re-Store

Dedicated incubator for fertility
restoration of stored eggs



The gains in hatchability are substantial, and increasingly so as the eggs are stored longer. What's more, significant improvements have been recorded in terms of chick quality and post-hatch performance.

Machine features and benefits

- The BioStreamer™ Re-Store is a 12-trolley machine with a capacity of 57,600 or 64,512² eggs.
- It is equipped with **more heating capacity** than a BioStreamer™ setter to ensure swift and controlled heating of the stored eggs.
- The BioStreamer™ Re-Store also has an **increased number and diameter of cooling coils**. As a result, the eggs can be cooled gradually to a temperature level that allows to place the eggs back in the egg holding room without disturbing the temperature there.

² If the eggs are loaded on Petersime High Density, 84-egg setter trays

WHEN[®]
CHICKS
COUNT

All photographs and descriptions are provided without engagement.
We reserve the right to make modifications at any time. Date of issue: 04/2017

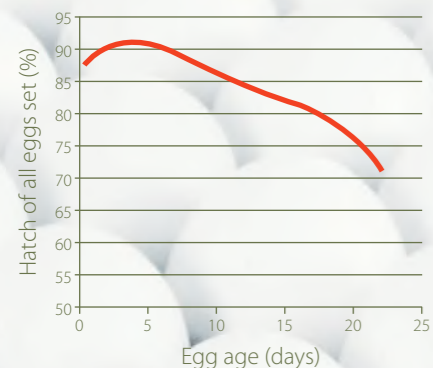


The Re-Store concept

Long egg storage times in hatcheries are often unavoidable because of logistics, market conditions, variable order sizes, etc. If these storage times exceed 7 days, however, losses in hatchability and chick quality become inevitable. On top of that, incubation time will increase and post-hatch performance will suffer.

Petersime has developed the long-awaited answer to this problem: the BioStreamer™ Re-Store. This incubator warms up the eggs for short periods of time during storage, restoring a significant part of the hatch decrease.

Professor Eddy Decuypere, University of Leuven



The biological story

In the egg holding room, eggs are kept at or under a so-called threshold temperature or **physiological zero** for development. At this temperature, embryonic development is slowed down until it stops. Still, significant losses in hatchability have been recorded as egg age increases.

Incubation expert Professor Eddy Decuypere (University of Leuven) explains why: *"Different cells or tissues in early embryos may have different threshold temperatures for development, and during storage, some partial development may already take place in some tissues in some embryos. This results in uneven or disproportionate development, which, if it goes too far, may interfere with embryonic viability and hatchability."*

In nature, a mother hen will lay one egg every day, until her nest is complete. As a result, the older eggs will be warmed each time the hen returns to her nest to lay the next egg. These eggs thus undergo a short period of incubation every day.

Professor Decuypere continues: *"Periodic warming allows the embryo to redress disproportionate development and ensures the required degree of embryonic development for all tissues in a proportional way."*

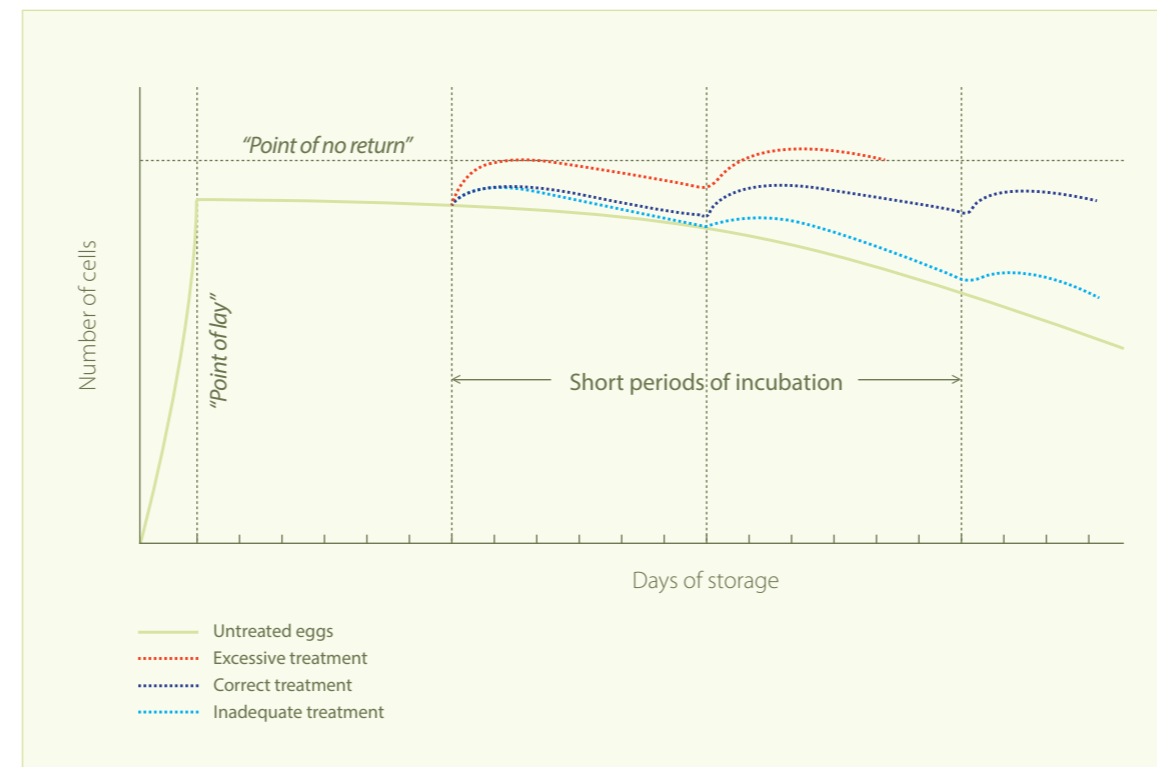
< Hatchability drops as egg age increases.¹

BioStreamer™ Re-Store: the principle

Many have tried to avoid fertility losses by heating up the fertile eggs for a period of time in a regular setter. However, consistent results are hard to achieve. For instance, if the temperature is slightly too high or if the eggs are heated for too long, a so-called "point of no return" will be reached: the embryonic germ will develop to a point where it can no longer be held in stasis and will die when placed back in the egg holding room. If on the other hand the temperature is too low, the treatment will fail to achieve any results.

Following extensive research using accurate measuring systems such as OvoScan™, a heat treatment system has been developed that is proved to sustain the number of cells in fertile eggs during storage. The result is the **BioStreamer™ Re-Store**: an incubator that is especially engineered and programmed to precisely control these heat treatment cycles.

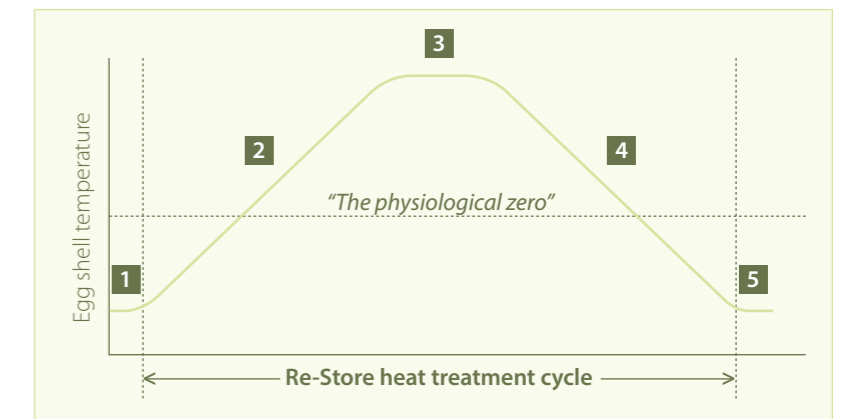
✓ The frequency, temperature and duration of the heat treatment cycles should be precisely controlled.



BioStreamer™ Re-Store: in practice

The heat treatment program takes about 12 hours in total and may be repeated several times, depending on the total storage time.

OvoScan™ guarantees a controlled, gradual, and precise heating and cooling of the eggs.



- 1 Fertile eggs that are stored for a longer period of time are transferred from the egg holding room to the Re-Store incubator.
- 2 The first phase of the program consists of a gradual warming-up of these eggs from egg holding room temperature to a temperature above the physiological zero. Thanks to OvoScan™, the warming-up can be done in a very precise and controlled way.
- 3 This temperature is sustained during several hours.
- 4 The air temperature inside the BioStreamer™ Re-Store is gradually lowered again.
- 5 As soon as the eggs reach egg storage temperature, they can be transferred back to the egg holding room.

All values and set points can be adjusted by the hatchery manager to optimize the process according to the specific needs of the batch of eggs.