

# Portuguese pioneers profit from chick quality plus energy and labour savings

Changes are occurring in the poultry industry of many European countries and Portugal is no exception. One of the success stories in that country is Lusiaves, Industria E Comercio, Agro-Alimentar SA, who is now the largest player in that market place. The company has built a new, state of the art hatchery and International Hatchery Practice recently went to Portugal to see their facility. The company is integrated and places 50% of its broiler breeders from Cobb and the remainder from Ross. These birds are placed on company and contract farms within 50km of the hatchery.

## Good hatchability

The hatchery first set eggs in February 2009 and is well on the way to producing its planned output of 1.8 million day old broiler chicks a week. The hatchery is probably the most sophisticated of its kind anywhere in the world.

Apart from single-stage Avida incubation systems from Chick Master and the labour saving automation from Viscon they have invested in Chick Master's latest Heat Recovery and Energy Management systems that, when used in conjunction with the



**The setter room.**

Galaxy Hatcher Management system, quickly generates figures, energy savings and trends required by management.

All eggs are fumigated on receipt and the state of the art fumigation room is featured in two of the photographs below.

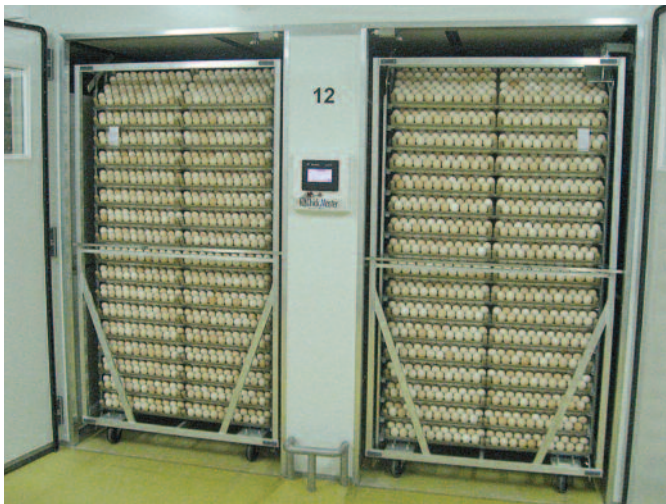
The hatchery has some interesting features, including single stage incubation, and the young and enthusiastic team at Lusiaves agrees that single stage incubation gives a better hatch and a tighter hatch window.

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**Left, all people entering the hatchery sanitise their hands. Centre and right, the inside and outside corridor of the fumigation room.**







**Above left, eggs in an Avida setter. Above right and below right, the Avida hatchers and plenum corridor.**

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In addition, single stage machines make cleaning easier and ensure better hygiene with obvious benefits in the resulting chicks produced.

### Total package of equipment

So, why did the contract go to Chick Master?

According to Avelino Gaspar, the owner of Lusiaves, this was because Chick Master offered a total package of equipment, plus service and support, and because they liked the concept of being able to manage an Avida incubator by section.

In addition, the Avida machine could be encapsulated in one word – ‘simplicity’.

Now that the new hatchery has been running for some time, Lusiaves have noted that, compared to their competitors in Portugal, they are able to provide a bigger more robust chick to their customers and that, with a shorter hatch window, the

chicks they supply are more uniform. In turn, they have found that this means better final results are achieved from the broiler flocks.

When the hatchery is at its capacity Lusiaves expect to be able to operate with just 10 staff, excluding drivers and office staff. This is, in some large part, due to the extensive amount of automation in the hatchery, principally by the Dutch manufacturer Viscon, which we will feature in a future article in *International Hatchery Practice*.

### Energy management

Energy management is very much to the fore at Lusiaves and this is an area where they have benefitted from Chick Master’s expertise.

The company is already making substantial financial savings with their heat recovery and energy management system.

This system recovers heat from the developing embryos, which is captured in the



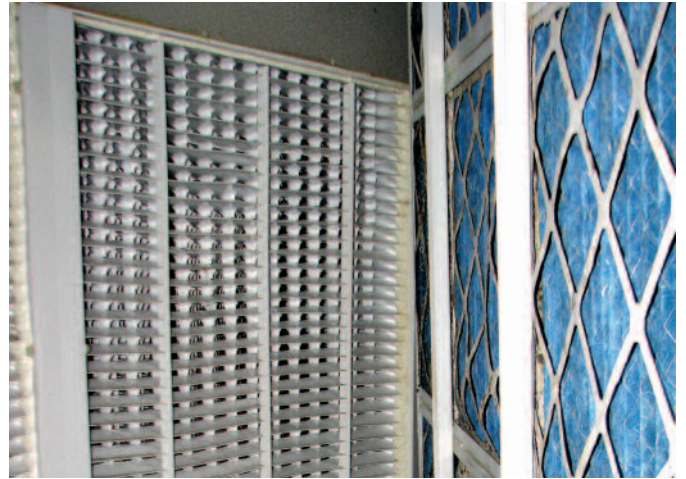
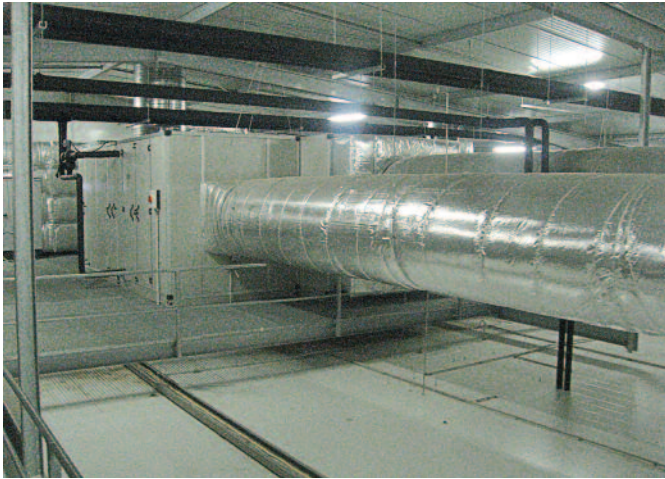
incubator’s cooling water system and from the exhaust air of the setters and hatchers.

The heat is then used to warm the fresh incoming hatchery air. Technically these two processes are known as primary and sec-

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**Left, the device for turning eggs in the egg store and, right, the team that makes it all happen!**





**Left, the lagged duct that takes the hot air from the incubators to the heat exchanger unit, right.**

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ondary heat recovery respectively, with the former typically accounting for some 80% of the recovered heat.

## Continuous water cooling

With the primary heat recovery system the heat from the incubator cooling system return water is used to warm the incoming fresh hatchery air.

A further benefit is that this water then returns to the system at a lower temperature further reducing the load on the water chillers and saving money in the process.

Incoming air first passes through a germicidal ultra violet light treatment system that



**Above, the control panel for the heat exchanger and, below, the automatic roll filter.**





effectively removes the vast majority of harmful micro-organisms from the air which then passes into the hatchery's ventilation system.

The air from the hatchers is naturally heavily contaminated with dust, which can build up on heat exchanger plates and reduces their efficiency.

#### **The water purification system.**



So, before the air from the hatchers reaches the heat exchanger plates it passes through Chick Master's special automatic roll filter.

This device is built into the duct that brings the air from the hatchers' plenum to the heat exchanger and comprises a filter pad that is easily fitted in place in a replaceable cartridge.

This cartridge roll filter then moves across the duct efficiently capturing all of the hatcher air contamination. A 'new' filter is made available automatically each time the air pressure across the filter drops.

This 'cleaned' air from the hatchers then safely passes over the plate heat exchanger transferring the heat from the hatchers into the cooler incoming air and avoiding any possible biosecurity issues for the hatchery in recovering this valuable heat.

Chick Master's approach of combining these two systems greatly reduces the energy bill that was traditionally needed for heating the hatchery's incoming air.

Although it is still early days for this dynamic hatchery, Lusiaves are winning on several fronts.

They are producing better chicks that are performing better as growers; hatchery automation (which will be featured in a later issue) is saving thousands of Euros on the labour cost front; and Chick Master's heat management system is doing the same for Lusiaves' energy costs. ■



***This unique little incubator from Chick Master enables Lusiaves to accurately determine flock fertility data. Trays of eggs from each breeder flock are placed in it and incubated for just a few days. Then, by breakout analysis, the percentage of fertile eggs is accurately determined.***