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12



ChickMaster

*Cover picture: the Lusiaves team, left to right: Eugénio Lopes, Pedro Palos, Mário Oliveira, Rafel Gonçalves, Márcio Fernandes, Luis Antunes (Hatchery Manager), Andrea Figueiredo. Not shown Pedro Ferreira (Production Director).*



**Avida**  
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PORTUGAL



# LUSIAVES

Parque Industrial da Figueira da Foz, Portugal





# Lusiaves - the New Portuguese Pioneers

I left Porto in darkness heading south on empty motorways with only the tingle of salt air from the mighty Atlantic in my nose to remind me that the sea was not far away. As the sun rose it revealed a timeless landscape fashioned by traditional industries and fuelled by a tangible spirit of adventurism that the Atlantic ocean inspired and embodied in the famous Portuguese explorers Magellan and Vasco da Gama. Today I was visiting a new breed of Portuguese pioneers.

Situated on the beautiful Portuguese west coast, just south of Figueira da Foz, the brand new Lusiaves hatchery is probably the most sophisticated of its kind anywhere in the world.

Founded in 1986, Lusiaves Industria E Comercio Agro Alimentar, SA, is now the largest producer in the Portuguese market place supplying all of the major supermarkets. The Company is integrated and places its broiler breeders (equally from Cobb and Ross) resultant day old chicks on Company and contract farms all within 50km of the hatchery.

recovery and energy management system as well.



"Lusiaves' secret is in innovation, as well as quality and food safety"

Sr. Avelino Gaspar, owner of Lusiaves.

On arrival at the hatchery I was greeted by Sr. Sr. Avelino Gaspar, the owner of the Lusiaves corporation. After introducing his youthful and extremely enthusiastic team, we set off for a tour of the hatchery. One thing that immediately impressed was the highly sanitized, crystal clean appearance that was more reminiscent of a hospital than a hatchery. I was astonished to discover that they only employ 10 people, excluding drivers and office staff, to operate a hatchery setting over 2.1 million eggs per week. This is largely due to the extensive amount of impressive automation equipment utilized in the hatchery and the easy functionality of the Chick Master Galaxy hatchery management system.

While I admired the impressive Avida setter rooms Sr. Gaspar remarked, "the Avida machine and its operation is best described in one word - simplicity. They are just so easy to use". He continued to enthuse, "now that the hatchery has been running for some time, we have noticed that we are producing bigger, more robust, chicks than our competitors. This is mainly because the hatch window is only about four hours from the Avida machines so the chicks are much more uniform giving greater homogeneity in the flocks sent to the

farms". He continued "in turn, we have found that this means better final results are achieved from the broiler flocks". Luis Antunes, the Lusiaves Hatchery Manager added, "also the Avidas make cleaning easier and ensure better hygiene with obvious benefits in the resulting chicks produced".

At Lusiaves energy management is taken very seriously and this is another area where they have benefited from Chick Master's expertise. Even in their mild Portuguese climate Lusiaves is already reaping substantial financial savings with their heat recovery and energy management system. "The energy cost of a hatchery represents the largest percentage of the cost of the process and as such we have given a special attention to ensure low costs in this area", explained Sr. Gaspar.

Chick Master's unique and highly sophisticated system recovers heat from the developing embryos which is captured in the



Operating the Chick Master Heat Recovery and Energy Management system

incubator's return cooling water system and from the exhaust air of the setters and hatchers. This heat is recovered and used to warm the fresh incoming hatchery air. Technically these two processes are known as primary and secondary heat recovery respectively, with the former typically accounting for some 80% of the recovered heat. A further benefit of the system is that the



Members of the youthful and enthusiastic Lusiaves team



Hatcher duct mounted automatic roll filter

Chick Master had also seen the further benefit of reclaiming valuable heat from the warm hatcher exhaust air that is normally expelled directly to atmosphere. Problematically the air from the hatchers is naturally heavily contaminated with chick dust, which can build up on heat exchanger plates thereby reducing their efficiency and compromising biosecurity. Chick Master ingeniously solved this problem by developing a special automatic roll filter that is built into the duct from the hatcher's plenum. This cartridge roll filter moves across the duct efficiently capturing all of the hatcher air contamination well before reaching the heat exchanger plates. A 'new' filter is made available automatically each time the air pressure across the filter drops. This 'cleaned' air from the hatchers safely passes over the plate heat exchanger transferring the heat from the hatchers into the cooler incoming air and avoiding any possible bio-security issues. Sr. Gaspar was clearly impressed, "heat recovery from hatchers, I think, has been an innovative system in this type of project. I must emphasize that this process has worked well".

Chick Master's approach of combining primary and secondary heat recovery greatly reduces the bill that came with the energy formerly required for heating the hatchery's incoming air. Furthermore, when used in

cooling water then returns to the water chillers at a lower temperature further reducing their load which results in a dramatic reduction in the consumption of electricity.

conjunction with the Galaxy hatchery management system, energy savings, hatchery trends and a myriad of other data required by management is easily generated helping to drive further efficiencies in all areas of the hatchery. Sr. Antunes confirmed, "Galaxy helps us to manage the process since it is an integrated management system of all machines and is very easy to work with. The daily monitoring of cost savings from the energy management system is also a very useful tool".

*"The choice for Chick Master was mainly based on the fact that we were presented with a complete project and not just equipment, something that pleased us compared to your competitors"*

Sr. Avelino Gaspar

I asked why the contract went to Chick Master. Sr. Gaspar explained that they initially selected a shortlist of four companies but because Chick Master could offer a total package of hatchery and energy management systems, plus service and support they were the obvious choice. Sr. Gaspar explained, "The choice for Chick Master was mainly based on the fact that we were presented with a complete project and not just equipment, something that pleased us compared to your competitors. The ability to operate the incubators section by section also was an excellent feature". He also gave credit to the initial Chick Master sales effort, "we must not forget to emphasize that the commercial work from Gregory Vanputte and Cipriano Crespo, the Chick Master representative in Spain, has been decisive in finalizing this order".

The hatchery also boasts a wealth of other innovations from Chick Master, many developed specifically at the request of Lusiaves. These include a state of the art



The Avida A24 has four individually controlled sections

'Lamina Flow' fumigation room, new configuration air handling units, heavy duty hatcher plenum ductwork and an egg store turning system to mention but a few.

Although we are still in the early days of the life of this dynamic hatchery, Lusiaves is winning on all fronts. They are producing superior chicks that are performing better for the growers while realizing substantial energy recovery and the associated cost savings, Sr. Gaspar, in the true Portuguese pioneering spirit, wants more. "We consider that the use of photovoltaics and wind power technology is a possibility to make even greater energy savings. This will be the next challenge that I now propose to Chick Master". He winked, smiled broadly, and then shook my

hand with vigor. The whole team came to see me as I set off back to the airport. "Thank you for your time and hospitality", I beamed, "no, THANK YOU", he said with true warmth and passion.



The Chick Master 'high visibility' hatchery central alarm system



The Lusiaves state of the art 'Lamina Flow' fumigation room

Eggs were first set here in February 2009 and is now well on the way to producing its planned output of 1.8 million day old broiler chicks per week. Not only have they invested in 48 high capacity Avida A24 single stage setters using the stackable 73 egg tray and 32 H408 Zephyr hatchers but they have had the foresight to install Chick Master's state of the art heat