Revolutionary technology stands the test of time

Several years ago HatchTech equipped the new Lagerwey hatchery with its revolutionary Micro-Climer incubation technology.

Recently, International Hatchery Practice visited this hatchery at Lunteren in the centre of Holland to see how that technology and the updated version of it were standing up to the rigours of the commercial world.

Currently, the hatchery produces approximately 1.7 million day old chicks a week. The hatchery was built in 1997 and is now eight years old. The eggs come from 40 or so Dutch contract breeders with equal numbers of Ross and Cobb eggs being set. In addition, one test flock of Hubbard and one of Pure Line are in the system.

The Lagerwey hatchery.

Changing requirements

In the current commercial climate, breeds are evolving quickly and the incubation requirements of their eggs are similarly changing.

In addition, the requirements of the different sectors in the industry are changing, but the team at Lagerwey say the greatest influence on breed choice and farming practices today comes from the processing plant. They are constantly reviewing breed choice.

Most of these contract breeder farms are within a two hour road journey of the hatchery, with many of them located in Brabant Province.

Eggs are held on the farm and delivered to the hatchery every five days. Thus, over a two week cycle eggs are collected on Monday, Friday and then the Wednesday of the second week.

This optimises the use of vehicles, time and egg storage space at the hatchery and also creates large enough batches of eggs for the single stage HatchTech machines.

The supply flock farmers receive a financial bonus for hatchability over 82%.

The chicks are supplied to farms within 3.5 hours travelling time of the hatchery, with a third going to German broiler farms and two thirds to Dutch ones.

On arrival at the hatchery all eggs are automatically fumigated in special, HatchTech designed fumigation rooms.

The eggs go through the complete fumigation cycle, including the neutralisation of any residual formalin gas from the paraformaldehyde prills, under the control of a computer program.

Revolutionary hatchery

When the hatchery was built emphasis was placed on quality and this has paid dividends by reducing the on-going spend on repairs and renewals.

Good examples of this include the floor, where an expensive, high quality

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The egg store and, right, the HatchTech fumigation room.

The original setters and, right, the new version with the up and over doors. Note how less space above the machine is required in the corridor.

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epoxy finish was used, the lighting system with 360° movement sensors banning out switches, stainless steel HatchTech pits and gutters and a central cleaning system using stainless steel piping.

When the first HatchTech incubators came on the scene in the 1990s they revolutionised the company's thinking and made single stage incubation a practical proposition for the producer.

They were able to set eggs of the same type and age in one machine and then provide them with an optimal incubation cycle to reap the benefits of better hatchability and chick uniformity.

This has been fine tuned for the next generation of their machines.

Accurate control

HatchTech's MicroClimer incubation technology accurately controls uniform airflow through the eggs. In addition, temperature, humidity and carbon dioxide levels are regulated in order to provide the developing embryos with optimal incubation conditions through-

The new MicroClimer control panel.



Left, inside the setters at cleaning. Special curtain flaps assist air flow and the cleaning process. Right, hatches ready for pulling.

out their development. This latest technology combines a full colour controller panel, an M6 mixing unit (for cooling and heating) and six radiators.

The embryos in each section are uniformly heated or cooled, which results in a uniform temperature throughout the machine.

The controller panel continuously monitors and regulates the carbon dioxide and humidity levels in the machine against the set points for the stage of incubation.

It reads from six different temperature sensors, one on each radiator, and these provide the key input for temperature control.

Optimal temperature distribution

The M6 mixing unit ensures an optimal and uniform temperature distribution in the radiators and its modulating valves mix the water to the correct temperature so that all six sections in the machine are individually cooled or heated via this unit.

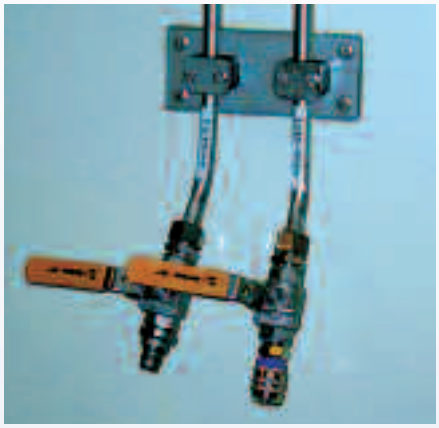
The radiators are designed so that the fans create a pressure differential across them and this and the pattern of the holes in the radiators ensure that a uniform constant flow of air is created.

This uniform air flow, coupled to the uniform temperature of the radiators, ensures a consistent incubation environment in the incubator.

But, there are other benefits. The machines are designed with food safe panels, which make quick and efficient cleaning at the end of each incubation cycle possible. In addition, the final stage of the cleaning cycle heats the machines up so that a final heat disinfection cycle can occur.

With this high quality panel, made out of polyurethane, the gas sealed machine design is secured.

At the end of the day, these setters are managed by people and the controls are very operator friendly and are based on a touch screen with full colour symbols.



CIP points are located throughout the hatchery.

This is further facilitated by a stand alone remote control unit, which the manager finds to be a really useful and worthwhile development.

This new incubation technology has now been running for more than five years.

In addition, all of today's hatcheries are being equipped with a hatchery control system which allows the hatchery manager to control the incubators from his desktop PC or even his laptop during holidays.

So what is the verdict of this new technology?

Precision management

Many of the benefits come from the precision that goes into managing the incubation environment in the setters, which results in better quality chicks and a more uniform hatch.

However, it does not stop there because this benefit is carried over on to the broiler farm where better bird performance is seen.

Typically, first week performance is better in terms of growth and liveability and this is then carried forward into the remainder of the productive life of the broilers.

So, why does this improved performance occur?

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Remote control is a real plus.

In the hatchers everything is very easy to clean and so high hygiene standards are easy to maintain.



Egg transfer/candling using Viscon equipment and, below, the end result – quality chicks.

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HatchTech was the first to realise that good incubation practice is focused on the embryo, rather than the incubator, and so, by providing the embryo with an ideal environment throughout its time in the incubators the embryo is able to direct all its resources into growth and development and is not wasting valuable energy and other resources in countering the effects of an adverse incubator environment.

This results in a larger frame size, a higher chick without yolk weight, a larger heart and an improved gastrointestinal development and function. It also results in an improved immune system and a chick that is better able to manage its own thermo-regulatory mechanism.

All round improvement

At the end of the broiler grow out this is manifested as improved FCR, improved growth rate, improved breast meat yield, better uniformity, higher liveability and, in the case of layers, better egg production. ■