

Chick quality from technical excellence

Successful parent stock production starts with good quality parent stock day olds and these in turn are the end result of breed, grandparent breeder management and a successful incubation cycle. To find out how one of the world's leading breeders is achieving this, International Hatchery Practice recently visited Ross Siam in Thailand.

Ross Siam is up country in a relatively poultry free area and the operation centres around the company's four grandparent farms and parent stock hatcheries.

A typical grandparent farm holds some 13,000 Ross 308 hens plus supporting males and supplies eggs to the hatchery twice a week. As a result of only two egg shipments a week special emphasis is given to the quality of on farm egg storage as eggs can be held on farm for three days or more.

Attention to detail

This attention to the well being of the egg does not stop at the farm gate as all eggs are transferred to the hatchery in a special air conditioned egg truck.

On the farm and in the truck eggs are kept at 18°C and at a relative humidity of 65%. Eggs are not washed but they are fumigated on farm.

Even though hatching eggs are graded on farm they are subjected to a second grading at the hatchery as they are trayed up on to setter trays. Once they are trayed up the



The Ross Siam hatchery.

eggs receive a final disinfection by spraying them with hydrogen peroxide solution.

Recently, Ross Siam refurbished their hatchery and replaced the older, more traditional Jamesway machines with Jamesway's new Platinum Series single stage setters and hatchers. These machines have been specifically designed for modern poultry production on two fronts.

Firstly, as single stage machines they can bring improved incubator performance to the hatchery by improving hatch window and chick quality. This, in turn, brings

improved bird performance once the chicks are placed on the ground.

Secondly, the sleek design of these machines with all the fittings, wires and piping out of sight means that they are easier to clean effectively. The higher hygiene standards bring obvious benefits to the resulting chicks. In addition, centralised control consoles, which house all the electronics and plumbing, makes maintenance and servicing a much easier task.

Platinum Series single stage machines also

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The egg store and, right, the Platinum single stage setters.





Inside and above the setters.

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provide two innovative features. Firstly, there is the dehumidifier for the setter which removes excess moisture without letting in external air.

This, in effect, ensures minimal disruption to the exact incubation conditions provided in the setter which are key to this system's success and is based on providing optimal incubation conditions in the setter stage.

Needless to say, this can only be achieved in a single stage machine with eggs at one stage of their incubation cycle as in any multi-stage machine there is always a compromise in incubation conditions as eggs at differing stages of incubation require subtly different incubation conditions.

In addition, the ideal conditions in the first week of incubation are



The Platinum hatcher and, right, Avigen's 'moisture loss during incubation' chart.

slightly elevated carbon dioxide levels and as this gas comes from embryonic metabolism the incubator must remain sealed at this stage. If the doors are opened the gas, and any benefits associated with its slightly higher concentration in the incubator, will be lost.

Thus, the dehumidifier allows excess moisture to be removed from the air in the incubator without adversely affecting the important carbon dioxide concentration, even when the damper is closed.

In addition, the regular opening of doors temporarily adversely affects other incubation parameters such as temperature.

Secondly, the Platinum machines have variable speed fans so the incubating eggs can be provided with an air flow that can be finely tuned.

The Platinum machines also have leading-edge touch screens that allow hatchery staff to modify incubation conditions. The screens are very user friendly with simple, easy to understand icons. Other subtle changes can be found. For example, the fresh air intake has been improved and is less dependent on room pressure.

Also, the increased height of the fresh air intake point above floor level prevents floor dust from being drawn into the machine, thereby contributing to the machine's improved hygienic conditions.

At the incubator stage Ross Siam use the Platinum SS 40320 setter that holds 40,320 eggs on its 42 setter trays and typically two machines are set twice a week, although this obviously depends on orders.

Benefits achieved

So what benefits have been seen since the change over to the Platinum machines? The main benefit is that hatchability has been improved, especially in late lay where the improvement is approaching 2%.

Some may say that this could be better, but this would be a tall challenge considering the excellent hatchability that Ross Siam had prior to the refurbishment. However, for operations where hatchability is not alongside the best in the industry greater improvements should be achievable.

The hatch window is now shorter and as

a result Ross are seeing better, more alert chicks that are more active and 'look nice'. Chick uniformity is even better and first week mortalities are consistently under 1.0%.

After pulling, sexing and grading chicks are vaccinated by injection against Marek's disease and against infectious bronchitis with Intervet's HI20 vaccine.

The hatchery operates to the highest of hygiene standards and these are constantly monitored by laboratory testing. In addition, day old chicks, dead in shell, hatcher fluffs and box liners are routinely screened for salmonella and the operation is Salmonella enteritidis and S. typhimurium free.

So, why did Ross Siam choose to go with the Jamesway Platinum Series? The answer is simple. Firstly, they were satisfied that the machines would deliver what Jamesway said they would and, secondly, the company has a long and satisfactory trading and servicing record with Jamesway.

If you couple technical excellence with strong product and customer support, what else could a discerning customer like Ross Siam ask for? ■

The new chick holding room which utilises cooling pads and, right, the staff accommodation.

