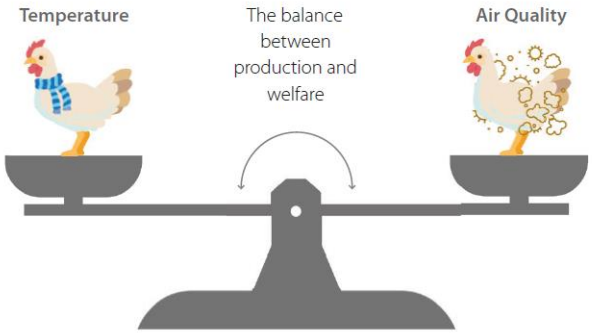
Optimal indoor climate reduces feed consumption and increases egg yield for layers

January 2024: Feeding laying hens is an expensive business. On average commercial laying hen feed intake rates are between 110 to 150g per day accounting for up to 60% of the total cost for each egg sold. Lots of progress has been made within the industry to optimise the recipe and application of feed to make this link in the value chain as efficient and cost-effective as possible. However, one area for improvement is the effect of indoor house conditions – temperature and air quality.

Research by Vencomatic Group has shown how optimised conditions can **deliver average savings of 6g of feed, per bird per day.** This is particularly good news when thinking about the sharply risen feed prices over the last years.

There are two primary aims in the management of indoor climate of a laying hen house:

- Maintain the internal temperature around the ideal of about 70F.
- Create good air quality with low CO2 and ammonia levels and humidity levels.



When these are in place the air conditions are optimal for egg production and bird welfare. However, maintaining these conditions in a laying hen house through the seasons is a difficult balance. Spring and autumn see a mixture of warm days and cold nights, plus spells of vastly changeable weather. This requires constant monitoring of the laying hen house conditions and frequent adjustment of the ventilation. In the winter the temperature drops, and the weather becomes wetter. The fresh air coming into the houses is colder and damper, reducing the internal temperature and with less drying effect. An option is to close some of the air inlet vents, at least for some of the time, and try to maintain the air inside nearer to the target temperature of 70F. This will keep the birds warm, however without proper ventilation the birds will soon show signs of stress, become less productive and more prone to disease. The litter will become too wet and will stick to the birds, the eggs may become dirty and the whole environment will become unpleasant, both for the workers and the birds.
The alternative is to maintain or even increase ventilation. A good flow of fresh air is essential for the welfare of the bird (controlling CO2, ammonia, and humidity levels). And don't forget a healthy flock of layers constantly adds moisture to the internal atmosphere through respiration and by their droppings which are around 70% water. This open ventilation, of course, will lower the temperature inside the house and as every poultry farmer knows, cold laying hens eat more food. When the conditions outside the house are wet, the circulating air is already damp and so has hardly any drying effect. In these circumstances the environment within the house can remain too wet even when ventilated and may get worse.

Trying to compensate for this influx of cold and damp air from outside the houses is an obvious step. It's accepted wisdom that laying hens just must be fed more during the winter months so that the birds' metabolism can keep them warm. However, there is another option. The Agro Supply ECO

Unit offers a viable, cost-effective alternative that really can provide the best of both worlds. In simple terms the ECO Unit is an automated ventilation system which refreshes the air in the house but saves almost all the warmth. House air, with high humidity, loaded with CO2 and ammonia is expelled and replaced with clean, fresh air which is much drier and crucially warmer than the ambient outside temperature. The two airflows within the heat exchanger never mix so there is no risk of the old air being blown back in, or of cross contamination. Instead, the incoming and outgoing air pass over each other in a series of thin tubes, allowing the outgoing air to warm up the air coming in. By 'exchanging' the heat energy in this way, the new air entering the house creates far less cooling than a simple venting approach of letting outside air straight in. In fact, the process is so effective that it typically recovers 80% of the heat from the expelled air, which would otherwise be lost completely.

While the food saving alone may be enough to make the ECO Unit a sound investment there are also additional benefits to consider. The overall improved climate in the layer house will have a positive impact on bird welfare. Less disease, drier litter, and healthier birds. It makes management of the layer house easier too. By actively moving the air with equal pressure, rather than relying on negative pressure airflow pattern control, you can be confident that the air is being regularly changed. The ECO Unit comes with air distribution systems that give a more even airflow pattern helping to minimise cold or hot spots within the house. This helps to prevent layers in an aviary system from smothering or avoiding some perches. Sensors within the laying hen house can monitor the levels of CO2, ammonia and humidity, triggering the ECO Unit to take action. This prevents too much cooling through unnecessary ventilation and equally avoids the build-up of toxic gases by not venting enough.
"When compared with similar flocks, we have observed significant feed savings and improvements in egg production by using the ECO Unit. Additionally, there have been positive impacts on the internal climate and external emissions related to ammonia and odour."
Mike Lee, Wilcox Farms, Michigan USA

Comparison Studies
Vencomatic Group evaluated the ECO Unit through several real-world studies based in Denmark, the Netherlands and the USA. It is the results of these studies which have identified savings of on average 6g of feed per bird per day by using the ECO Unit. As a general guide Vencomatic Group advise that for each 1 degree below the target 70F, layers will consume 1% more food. The exact amount of feed that can be saved varies according to a number of factors including location and position, housing type and size, weather and climate, bird age and feather coverage.

Curious to find out how Vencomatic Group can help to create an optimal climate condition by installing an ECO Unit heat exhchanger and calculate together the positive impact this will have on your financial results? Stop by our booth **B23005** during one of the **IPPE** show days.

You can also download our **free Save Feed white paper** in which we explain you even more about the benefits and the way the ECO Unit works.

Company Profile

At Vencomatic Group, we are on a mission to make poultry husbandry sustainable. We seek to balance the operation of a successful business with the lowest possible environmental impact, all while trying to achieve the highest animal welfare levels. We always, develop our products based on a thorough understanding of the bird, her well-being, and her eggs.

Our unique solutions are supporting the entire 'Egg Way' for layers, breeders, broilers, and hatcheries. Think of poultry housing equipment (Vencomatic, Van Gent), egg collection and handling equipment (Prinzen), and climate solutions (Agro Supply). And we don't stop there, discover how Meggsius powers precision farming and gives us the opportunity to help our customers even further, reaching the maximum potential out of every bird, every flock every farm.

For more information please visit: www.vencomaticgroup.com

For more photos or logo please send your request to: marketing@vencomaticgroup.com