

The importance of appropriate pullet rearing

BACKGROUND

How pullets are reared influences the bird's welfare throughout their entire life¹. In higher welfare systems there is a greater potential for birds to express natural behaviours. The move from cage systems to cage-free, and typically free range systems, greatly improves the welfare of laying hens. Pullets need to be reared in environments they will experience when they are laying eggs. The primary welfare problems suffered by free range hens include poor ranging behaviour, feather pecking and keel bone fractures. With appropriate rearing of pullets, their welfare at an older age may also be improved.

Poor ranging behaviour

It has been shown in a number of studies that only a small proportion of hens range outside at any particular time¹. Poor ranging behaviour, both in terms of not going outside the shed and not moving far from the shed impacts the bird's ability to fulfil foraging behaviour and increases the risk of feather pecking².

Feather pecking



Injurious feather pecking is a major welfare problem in laying hens which can occur in all types of rearing systems, including free-range systems that have a higher welfare potential. In the most severe cases it can lead to cannibalism. In order to reduce the risk of feather pecking and cannibalism, hens are usually beak trimmed. In the UK and most of Europe laying hens beaks are trimmed using infra-red beam equipment at a day old. Beak trimming leads to tissue and nerve damage and is likely associated with acute and chronic pain¹. Pullets with infra-red trimmed beaks are shown to be less active, eating and drinking less than those with intact beaks³. As adults it continues to impact behaviour with birds having a slower ingestion rate and a shorter time between meals⁴.

Pullet rearing is an important part in reducing the risk of feather pecking. By engaging pullets in ranging at an earlier age they are more likely to range once they mature. Foraging behaviour is widely accepted as a primary factor in reducing the risk of feather pecking.

Keel bone fractures

Modern laying hens have been selected for high egg production, with the capacity to produce over 300 eggs a year. Alongside factors such as diet, age, weight and breed, this high yield impacts the strength of their bones and their susceptibility to fractures. Keel bone fractures are

major welfare concern for cage-free hens (although they do also occur in enriched cages). As well as having economic implications (reduced egg production⁵ and likely reduced carcass quality), they cause pain and limit bird movement and are therefore a serious welfare concern⁶. Pullet rearing management practices, discussed below, can play an important role in reducing the risk of factors.

IMPROVED PULLET REARING CONDITIONS: THE STONEGATE EXPERIENCE

Stonegate

Stonegate is a major egg producing and packing company in the UK. Their British Blacktail hens (BBT - previously known as Columbian Blacktail) are a joint initiative between Stonegate and Waitrose and are used exclusively by Waitrose for their own-brand shell eggs in both their Duchy organic range and free range eggs.

This case study highlights how Stonegate is delivering higher welfare conditions for laying hens by changes in the management of pullets on grower farms. This has impacts on feather pecking, ranging and keel bone fractures. Stonegate have incorporated AssureWel management strategies (BEIC Lion Code and Assurewel) into all their flocks.



Early access to the range



Stonegate made the decision in 2003 to move to organic pullet rearing for the Waitrose Duchy range. A protocol was agreed with the Soil Association and Stonegate remain the only packer and processor following this program today*. The move involved a range of management changes, including allowing pullets to access the range by 10 weeks of age at the latest. This early access encourages birds to range and forage outside at an early age.

Producers noted that the birds immediately start ranging when they are moved to the laying hen sheds, which is not common in systems without early access to the range. They also noted that birds appear to range further, with more birds going outside at any one time, the longer they stay out and the less fearful they are. This is in line with research suggesting organic birds are less fearful

* As of December 2015

and emerge quicker from a test box placed outside when they were exposed to the range from a younger age¹.

In addition producers have found greatly increased grass consumption by birds, and producers have to manage their pasture accordingly. Another unexpected difference is the hens' shanks are a yellowish orange colour by the time they reach the laying shed, something not seen in conventionally reared pullets (who only have access to the range just before coming into lay).

Providing cover on the range is just as important for pullets as for the hens. Artificial covers are used for mobile sheds and these include camo nets or towable covers. For 2000 birds 12 covers are placed on the range⁷.

Prior to 2003 there was an average 10% breakdown in flocks with severe feather pecking. Following the changes to pullet rearing it reduced to 1% per year. A study conducted by Dr Anne-Marie Gilani, which involved Stonegate farms, assessed thirty-four flocks from 29 rearing farms by visiting them at the beginning, middle and end of the rearing period and once at lay (35 weeks). Results confirmed the company's findings: through ranging at an earlier age, the ability of pullets to be able to exhibit foraging behaviour significantly reduced the risk of both severe and gentle feather pecking⁸.



Whilst welfare improvements have been highly visible, providing early access to the range for pullets increases cost of production by about 15%. As there is an organic premium this cost can be absorbed, but delivering this throughout the conventional free range flocks is the next target for Stonegate. Through close collaboration between the retailer and the processor this outcome is being achieved.

Dark brooders

In 2008, following close collaboration with Dr. Christine Nicol at Bristol University, Stonegate introduced dark brooders. This was based on research which suggested that access to dark brooders may reduce feather pecking and improve overall feather coverage.

Dark brooders are panels equipped with heating elements, surrounded with black, plastic fringes blocking out the light from day one. The area underneath the dark brooder is made warmer by using some form of heating, either by the use of underfloor heating, hot pipes or thermal heaters. The chicks go under them when they are tired, as they would a mother hen's wing. This allows them to stay away from other active chicks that are investigating the lit part of the shed. By providing a shelter for the tired birds to sleep they are no longer at risk of investigative pecking by the active chicks; this in turn reduces the behaviour of feather pecking during the laying phase⁹.



This is a dark brooder with the fringes removed (as birds are 8 weeks of age). The dark brooder is hung on chains that allow for the height to be adjusted as the birds grow. The fringe is removed once they no longer need a dark heated area beneath and instead the birds prefer jumping on it.

The success of the dark brooders was instant, with rearers finding birds had better feather cover, with fuller, thicker feather coverage at 16 weeks. Producers also consider the birds to be friendlier and more docile. This makes it easier to move through the shed as birds don't flock into the corners and this reduces the risk of smothering. Severe feather pecking was greatly reduced during laying and feather cover was better at end of lay.

This improvement is in line with the preliminary research conducted by Gilani et al in 2012 which showed dark brooders significantly reduced feather pecking and significantly improved feather condition¹⁰. Research has also indicated that chicks are shown to have more diurnal synchronisation¹¹. It should be noted that both mortality rates and body weight are not affected at the end of rearing¹⁰ by the introduction of dark brooders, an experience mirrored by Stonegate.

Stonegate soon introduced dark brooders in all British Blacktail (BBT) organic sheds, starting with internal producers and then moving on to contract producers. It has been such a success that Stonegate are now trialling dark brooders in growing sheds for all their conventional BBT free-range flocks.

The pullet rearers have also noticed that they are able to save energy using the dark brooders. There needs to be an 8°C difference between the temperature in the shed and that under the dark brooder. This allows the sheds to be kept cooler and therefore saves energy.

The producers have found that the cost of introducing dark brooders is neutral and over time money could be saved. A study in Denmark, which is yet to be published, confirms producers' experiences, with current findings indicating a reduction in energy consumption of 27.8%. For the laying hen producers and the pullet rearers better feather coverage improves feed efficiency as birds do not need to consume as much food for thermostasis, thus reducing feed costs.

Early access to furnishings in the shed



The rearing of pullets is a very important factor in preparing birds for the sheds they will later enter during laying. The layout of the shed may impact the risk of keel bone fractures. By designing the pullet shed to give access to the raised slatted area and appropriate perches or raised tiers it provides time for the pullets to learn to navigate the shed while they are young and light and their bones are stronger and more flexible.

Stonegate rearers introduce A-frames gradually from 3 days of age to 6 weeks with access set at 6cm/bird. This in a configuration is aligned with the laying hen shed. Research has shown early access to perches increases bone strength¹² and may therefore reduce fractures¹. Early access to perches also improves the accuracy of long flights and jumps¹³, which should reduce collision risks. An additional management advantage is that it reduces the number of floor eggs when hens come into lay¹³.

Stonegate are currently monitoring keel bone fractures in their laying hen flocks and will use the data to quantify the benefit of early perch access to bird welfare.

Other provisions include hanging string which is linked with significantly reducing feather pecking in the both the rearing and laying phase¹⁴.

HOW TO IMPLEMENT CHANGES IN THE SUPPLY CHAIN

Stonegate believe it is a two way process in delivering change throughout the supply chain. Upwards through the retailer and downwards through their producers. A strong evidence based is required to provide the sound reasoning for making changes. Where costs are neutral the process is less complicated but producer buy in is crucial and this can only come through shared experiences and knowledge exchange between producers. Where there are additional costs investment is required and may need to be reflected in the cost of the end product.

For example, knowledge exchange has been very important in implementing dark brooders in sheds. The use of dark brooders requires close monitoring as there must be an 8°C difference between the temperature in the shed and that under the dark brooder. This can be monitored by an automated system with a warning alarm but it can make producers apprehensive as they are often concerned about chilling effects if temperatures are too low.

Producer groups along with farm visits enable knowledge exchange and allow producers to learn on site how to manage them giving them the confidence to invest in changes.

Stonegate also utilises premiums to give added incentive. There is an additional 1 – 2% increase in price paid for eggs for those implementing internal shed enrichments and a full non beak trimmed position. Where improvements require considerable investment costs Stonegate aim to make this cost to the producers neutral through added premiums.

KEY LEARNINGS AND TAKE HOME MESSAGE

Stonegate have successfully reduced the risk of feather pecking in laying hen flocks and improved the overall health and welfare of the birds through improvements to pullet rearing. Key aspects include:

- Provision of early access to the range to improve bone strength, reduce fearfulness, improve foraging and ranging behaviour in later stages and reduce the risk of feather pecking.
- Provision of dark brooders, reducing the risk of feather pecking and improving feather coverage
- Early access to the perching system - improving bone strength and allowing birds to learn how to navigate the shed. This should reduce the risk of keel bone fractures.
- Incentivising farmers and providing knowledge exchange through the use of farmers' groups - giving producers confidence to make the required changes needed in rearing.

Contact us

Food Business Team
Compassion in World Farming
River Court
Mill Lane
Godalming
Surrey
GU7 1EZ

Email: foodbusiness@ciwf.org

Tel: +44 (0)1483 521950

Web: compassioninfoodbusiness.com

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