

Management practices that can help to avoid or overcome pecking

Individual or flock behaviour can be the result of individual factors, but often it is a combination of multiple factors. In general, a laying hen can cope with moderate stress, such as rises or falls in temperature, transfer from the rearing barn to the laying facilities, or minor and gradual changes in the diet. It is important to recognise any significant change in flock behaviour, as these changes can be good indicators of trouble within the flock.



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The sooner a problem is detected, the easier it is to overcome and limit its impact. In this article we will discuss one of the most common behavioural problems that can occur when keeping laying hens: pecking.

We will explain the common risk factors involved, and offer easy to implement management practices that can help to avoid or overcome pecking.

Pecking

Feather pecking can become a major welfare problem in laying hens. Severe feather pecking can result in denuded body areas. These areas are then more vulnerable for tissue pecking, wounding and, in more severe cases, mortality due to cannibalism or infected wounds.

We should not forget that feather cover is the first line of defence for laying hens. Next to feather pecking, pecking around the cloaca (also called vent pecking) can be one important cause of mortality. Vent pecking is often observed early in the laying period and towards the end of the laying period. It is observed in both cage and cage-free housing.

In cage-free it mostly occurs when nests are too bright, or when the hens are producing floor or system eggs. Chickens are very curious by nature, and they can be triggered by the cloaca/egg production to think, 'hey, what is that?'

The wounds that are the result of the pecking, can trigger the birds to peck at it again, as it looks different/new to them. Good and timely management intervention can prevent excessive pecking behaviour.

Keep in mind that next to the economic losses of higher mortality, there are also economic losses related to feather cover as this will lead in most cases to increased heat loss and consequently to higher feed consumption.

There are different kinds of pecking. In the egg sector a distinction is made between gentle pecking, which is considered normal social interaction between laying hens, and severe pecking, which is considered abnormal behaviour.

- Gentle pecking is defined as careful pecks, not resulting in feathers being pulled out and usually without reaction from the recipient bird. This is a form of social and explorative behaviour. More of these social interactions occur between brown egg layers as they are more curious than white egg layers.

- Severe/injurious pecking is defined as forceful pecks, feathers are often pulled out and you can clearly observe that the recipient hen is moving away, or she cringes. This form of severe/injurious pecking is clearly a form of aggressive behaviour. It often starts at the back, at the base of the tail feathers. It is also observed to start at the top of their heads and at their necks.

When present at the neck, it is often misinterpreted as moulting and ignored. You can distinguish

moulting versus pecking by looking closely at the feather loss. If you can observe true damage, it is most likely to be the result of pecking. Severe pecking can start during the rearing period and it is known that flocks that have had to deal with feather pecking in the rearing period are more likely to develop pecking during their productive life.

Stressful circumstances can result in this aggressive pecking behaviour. You can often hear typical pain squawks of the birds that are aggressively being pecked. It is extremely useful to take the time to look and listen to your flock. This can help you identify changes in behaviour sooner, allowing you to take more timely interventions. By forcing yourself to execute daily inspection rounds you will train yourself to listen to your flock, and to identify 'what your flock is telling you'.

Any abnormalities in behaviour, movements, sounds, presence in the system (for cage-free), are indicators of a serious stress that is affecting your flock.

The most common causes of pecking are listed below:

- Parasitic infection: external (red mites, poultry lice) or worm infestations (*Ascaridia*, *Capillaria*).
- Enteritis and diarrhoea.
- Inadequate ventilation, leading to high levels of humidity, dust or ammonia.
- Draughts.
- No respect for density and equipment specifications.
- Insufficient floor space, stress due to overcrowding.

- Limited access to drinkers and feeders (insufficient number/poor distribution).
- Difficulty to access nests, resulting in birds laying floor eggs that could result in pecking of exposed vents.
- Shortage of water or feed.
- Empty drinkers/feeders.
- Water or feed unpalatable.
- Too low pressure/leakage.
- Improper ground connection of feeder and/or water equipment.
- Poor beak treatment.
- Feed not suitable.
- Sodium deficiency.
- Amino acid deficiency.
- Lack of insoluble fibre.
- Sudden change of feed particle size or feed ingredients.
- Excessive energy level, leading to a reduction in bird's feeding time.
- Mistakes in the feed composition – like incorrect salt inclusion.
- Light intensity too bright.
- Light source too powerful.
- Direct light from fluorescent bulbs (especially) or tubes, depending on the type.
- Entry of direct sunlight into the poultry house.
- Flickering light bulbs.
- Too sudden increases in the duration of light.
- Nests illuminated too bright – birds' vents targeted during egg laying.

Preventive actions that can be taken to avoid pecking

EQUIPMENT:

- It is advisable to install a housing system that creates different zones: a zone to rest, a zone to lay eggs, a zone for dustbathing and foraging, zones for eating and drinking. This is easier in cage-free housing systems compared to cage housing, but enrichments in cage housing (nest compartments, perches, scratching areas) can limit the impact of pecking. These different zones will also allow the pecked hens to find a place to escape.
- Never overpopulate the house, not in rearing, not in production. Allowing the birds sufficient space will give the birds less chance for negative counteractions, and there

will be less competition for feeder and drinker space.

- When wintergardens are provided to the flock, try to make them attractive by installing drinkers, and creating lots of opportunities for dustbathing. Dustbathing encourages positive social interactions, helps the birds to get rid of lice and mite and stimulates a healthy feather cover.
- For free-range or organic flocks with outdoor access: provide plenty of opportunities for the birds to shelter. Planting shrubs and trees will make the range more attractive, installing outdoor shelters will also provide the birds with a safe feeling. Try not to make the range attractive to predators as this can scare the birds off from using the range intensively. Installing an electric wire at the outside of the outer fence can scare off foxes and other unwanted visitors.

- In recent years, more information has become available on the effects of lighting. LED lighting is strongly preferred. Daylight that enters the barn does not need to be a trigger for the flock to develop pecking. Many successful flocks have been reared and kept in production with natural daylight entering the barn. It is very important that the natural daylight is evenly spread when it enters the barn, it should not create big contrasts in regions that are very bright or that show a lot of shadow. Even light distribution is also important for all artificial light sources used. Do not underestimate the impact of light on the behaviour of chickens.

- If you would like to be able to make use of the option to dim the lights in case of severe pecking, then it is advised to start off with bright lighting. This will allow you to use light dimming as an intervention method. The bright light will not harm the birds if no feather pecking occurs.

- Using the red colour spectrum can help to lower the incidence of severe pecking. The red light will hide the differences in areas with or without feathers as well as the wounds. When you install new LED lighting, consider installing the LEDs where you can easily switch on the red colour spectrum.

- Make sure nests are attractive, and they are available in sufficient quantities. Avoid too crowded nests. Hens need to have the time and space to feel comfortable when producing an egg. Competition for nest space should be avoided. Well-designed attractive and clean nests, in sufficient availability, can reduce the incidence of floor or system eggs. Do not forget that hens producing eggs outside the nests are more prone to vent pecking.

CLIMATE:

- A healthy, fresh, and well-balanced barn climate stimulates

chick, pullet, and hen health.

Ventilation is key as it can provide fresh air and stimulate a healthy climate (proper ventilation will reduce dust and ammonia levels). Always avoid draughts, as this will have a negative impact on the barn climate.

- There is a higher chance of developing severe pecking under tropical, hot, and humid conditions. Laying hens and parent stock are better able to cope with colder, but dry climates, compared to hot and humid. Investing in good functioning climate control equipment will pay itself back over time.

- When the chickens have access to litter, keep an eye on your litter quality. Keep it dry and loose and remove caked litter as soon as possible as it can negatively impact the climate inside the barn quickly.

HEALTH MANAGEMENT:

- A good biosecurity plan is absolute key for all chicken farmers, whether it is rearing, parent stock or production. Good biosecurity will result in a lower risk of pathogens entering the barns and affecting the flock. Keep it clean. Remove dead birds as soon as possible, regularly check the system, the nests, or the cages for the presence of dead birds.

- Gut health is key: most flocks that show feather pecking or cannibalistic behaviour have troubles related to gut health. Adding acidifiers to the drinking water can promote gut health. Providing alfalfa, grass or hay can also have a positive impact on gut health. Always consult your nutritionist and poultry veterinarian to come up with a plan that is designed for your operations. Regularly check the acidity levels of the drinking water.

- It is known that worms have an impact on general bird health, including the development of feather pecking/cannibalism.

Monitor the worm infection status of your flocks regularly, deworm always in consultation with your poultry veterinarian, as too frequent deworming can also activate feather pecking/cannibalism (if something can kill worms, it can also impact the microbiota/gut health of the chickens).

- The presence of both (red) mites and lice are directly linked to feather pecking and cannibalistic behaviour. They cause stress to the birds, and this can result in feather pecking/cannibalism. Have a mite/lice eradication programme in place, again prevention is often the cheapest and most effective method.

- It is advised to install a separate pen for injured/wounded birds. This will allow them the rest needed for recovery, and they will not get the attention from the more curious birds. An infirmary is strongly advised for parent stock flocks. When you make use of an infirmary, the chickens have a better chance to survive and recover. It is also easier to treat the chickens.

FEED MANAGEMENT:

- Feeding techniques can be used to distract the birds from pecking each other. Supplying additional grain several times a day will keep the flock active, as something exciting is happening.

- Supplying coarse grain/feed particles promotes overall gut health, as they take more time to digest resulting in a more 'satisfied' feeling for the chickens.

- Adding grit, or oyster shell, will promote bird activity, and stimulate general health (including bone health).

- In case of cannibalism, extra salt can be temporarily added (for a period of one week) to the drinking water (0.5-1.0kg of salt/1,000 litres of drinking water).



- The diets provided to the flocks should be well balanced. Protein, fat, carbohydrates, minerals, and vitamins should all be present in sufficient proportions. Fibres and coarse particle sizes have shown to stimulate general gut health and, as mentioned earlier, chickens with a healthy gut have a lower chance of developing severe feather pecking or cannibalistic behaviour.

- The empty feeder technique is strongly advised, especially when birds with intact beaks are kept. The empty feeder technique will guarantee that there is no accumulation of very fine particles, and it will prevent selective eating. The empty feeder technique also stimulates crop development and feed intake during the rearing period.
- Chickens cannot deal well with dietary disruptions, therefore introduce dietary changes gradually as big changes will cause stress to the chickens.

OVERALL MANAGEMENT:

- Make sure that the birds are used to human interactions and noises. This habituation process should start during the rearing process. Visit your flock frequently so they know who you are. When you have technical visitors to your farm, make sure they wear farm coveralls, in a colour they are used to (when they are used to blue coveralls, and suddenly someone wearing a red coverall enters the barn, this can cause panic/stress to the chickens.

Installing a radio can help to train the chickens to get used to different sounds and can help in hiding background sounds.

- For parent stock, or certain organic flocks, make sure the male to female ratio is well balanced in the production barn. Spiking, replacing older males by younger males, can result in stress for the hens.

- There are many different options to distract the birds, often referred to as enrichments. Think of pecking stones, pecking blocks, plastic bottles, big boxes, footballs, CDs, straw ropes, big plastic toys (that they cannot ingest). These are just a few of the many enrichments that are available. ■

IF A PECKING OUTBREAK OCCURS

As pecking is difficult to control once it has started, the objective is to be ahead of the problem to prevent an outbreak. If it does occur (bearing in mind that it is indicative of abnormal behaviour) the objective should be to identify the problem promptly and remedy the cause as quickly as possible. If a pecking outbreak occurs, you need to react quickly:

- Try to decrease the light intensity. Take caution as the percentage of floor eggs could increase, and feed intake could be decreased.
- When the lighting system allows, make use of the red LED light spectrum. Otherwise, you can paint the light bulbs in red or place red light covers over your TLs.
- Add salt into the water (0.5-1.0kg/1,000l).
- Add extra vitamins/minerals/amino acids in water.
- Add extra fibre sources within the house, like alfalfa or grain hulls.
- Add enrichments within the house (pecking blocks, fibre bales, plastic bottles, plastic toys, compact discs, etc). Make sure that the enrichments are compliant to local legislation and they are not harmful to the hens.
- Try to isolate the birds that have been severely pecked (place them in an infirmary, sick pen). By removing them from the flock the remaining birds will be less distracted by the different behaviour of the affected chickens.