

## Emergency measures against feather pecking



**WAGENINGEN**  
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## Use of the fan deck

This publication provides a brief overview of measures that poultry farmers can implement against harmful feather pecking behaviour. This publication is intended for poultry farmers with laying hens or broiler parent birds.

The booklet *Van kuiken tot kip* ('From chick to hen,' available in Dutch only) contains a number of measures which can prevent feather pecking and cannibalism.

This publication can be downloaded via:

**<http://edepot.wur.nl/189478>.**

This booklet primarily focuses on the prevention of problems. However, if feather pecking behaviour is already present, every effort will need to be made to limit damage. This fan deck is specifically aimed at limiting damage from feather pecking behaviour. Our hope is that the fan deck will contribute to successful husbandry of poultry with untreated beaks.





## Feather pecking

Gently pecking at each other's feathers is normal chicken behaviour and usually has no consequences for plumage. Damage can occur if the chickens start pecking with more force. The chickens will pluck out parts of each other's feathers, or perhaps even entire feathers. Excessively strong feather pecking is not normal behaviour. It can result in damaged plumage and naked chickens, and also regularly results in injury.

Feather pecking often begins at the base of the tail, but can also begin with bare heads and necks.

The first visible signs are irregularities in the plumage (crooked feathers, feathers with pieces missing). Irregular plumage at the rear of the head is often mistaken for moulting in the neck. Also in the rearing period, irregularities in the plumage are often mistaken for moult.

However, when a bird is moulting its feathers or feather shafts are crooked, but not damaged. Feather pecking results in visible damage to the feathers: pieces are broken or missing (see photo).

In the rearing period, damaged feathers may fall out through moult, and it may not appear as though the flock is pecking. Flocks that have displayed pecking behaviour during the rearing period have a significant chance of pecking during the laying period as well.





## Verwondingen

Severe cases of feather pecking can often result in injuries. These can generally be found at the base of the tail and behind the flanks.

**Cloaca pecking:** Chickens sometimes peck at the area around another chicken's cloaca. This often happens when a hen lays an egg outside the nest boxes. The cloaca bulges and becomes red and shiny and visible to other chickens, which then peck at it out of curiosity. This results in wounds. Cloaca pecking can also follow on from feather pecking around the cloaca (for instance, directed to resting or scratching chickens). This results in a loss of feathers around the cloaca, so that it becomes visible to the other chickens. They then peck at the cloaca, creating wounds. These wounds may then be pecked at even more by the chickens, which ultimately can lead to cannibalism.

**Cannibalism:** Cannibalism generally arises when feather pecking turns into wound pecking or as a result of cloaca pecking. It may also arise spontaneously if, for instance, chickens wound their feet or comb. These wounds are then pecked at by other curious chickens, and this makes the wounds larger. In extreme cases the intestines or laying organ of a chicken may be completely pecked away.







## Stall set-up

### Separate functional areas

Create a quiet zone (raised area with perches, no feed), a laying zone (nests with landing platform, but no litter or feed nearby) and a foraging zone (with feed, roughage and litter). This will create calm in the stall and reduce the likelihood of feather pecking behaviour.

### Good opportunities to move and to escape

Conflicts between chickens stop quickly if the birds can move away from one another. Make this easy for them by using landing perches, platforms, steps and wide aisles.

### Sick pen

Remove sick or injured animals and separate them in a sickpen if needed.

### Partition or other shelters

Partitions can give the chickens something to hide behind, allowing conflicts between chickens to stop quickly.





# Outdoor runs

## Improving use

A well-used outdoor run keeps the chickens busy and makes the henhouse less crowded at any one time. Encourage use of the run through:

- **Natural shelters:** trees, bushes
- **Artificial shelters:** camouflage nets, roofs, etc.
- **Dust baths:** such as a sandbox
- **Plant growth in the run:** possibly by frequent altering of runs

## Protection against predators

Predators could cause the chickens to go outside less often. Protect against foxes by using good fencing, making sure that the wire is buried in the ground to a depth of at least 30 cm. Install electric fencing on the outside perimeter of the wire, preferably at multiple heights. Plant trees and bushes to deter predatory birds. If necessary, span wires over the run so that predatory birds cannot land inside.





## Covered veranda

### Increase appeal

The covered veranda ('winter garden') is usually a bare space. Furnishing it appealingly can increase use. This will decrease the population in the henhouse at any given moment and give the birds something to do.

Make the covered veranda more appealing by adding:

- dry and friable litter
- roughage
- scattered grain
- green fodder, such as freshly mown grass
- drinking water
- enrichment materials
- perches
- partitions to hide behind

### Enrichment materials

Enrichment materials should preferably be changed regularly, so that there are enough 'new' items to maintain the animals' interest. In addition to various types of roughage, there are a lot of other possibilities: pecking blocks, Christmas trees, CDs, bottles of water, footballs and ropes.

See also the section on enrichment materials.





## Climate

### More ventilation

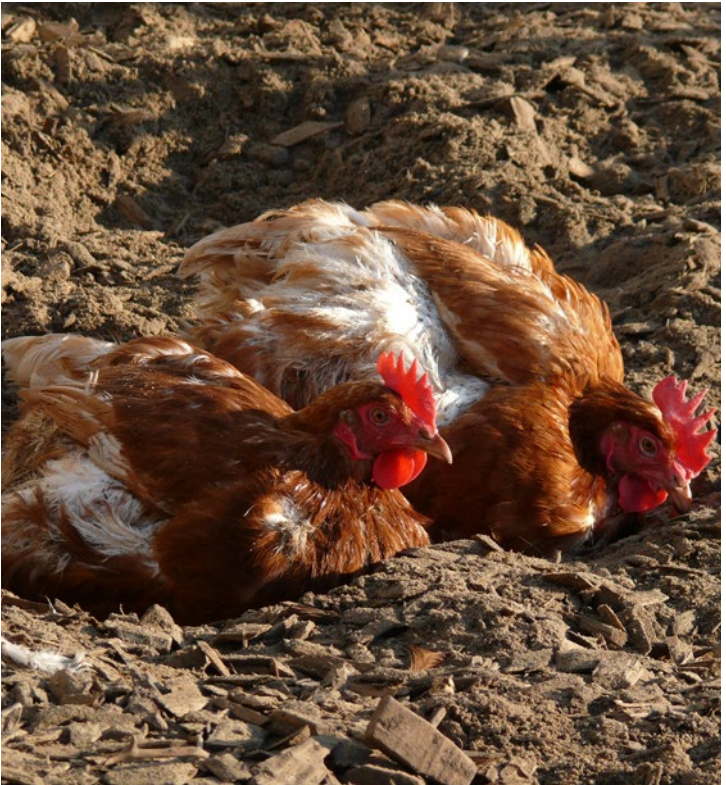
A fresh and balanced climate promotes animal health and reduces the chance that feather pecking will occur. Feather pecking is more likely to occur in warm, humid henhouses. Increase ventilation, but avoid draughts, so that temperature, ammonia and dust levels are kept low. Low temperatures do not pose problems for chickens, but humid climates do!

### No high temperatures

Feather pecking is more likely to occur in high temperatures. In low temperatures, chickens eat more, but well-feathered chickens have good insulation and therefore eat less.

### Improve litter quality

Keep the litter dry and friable, and remove or break apart clumps. Especially near popholes wet spots may occur. If needed, scatter some moisture-absorbing litter in these spots. Make sure that the litter layer is no more than 5 cm thick. At this thickness the chickens can easily scratch it loose and keep it friable themselves.







# Illumination

## Daylight

Daylight does not have to result in feather pecking if the illumination is even and there are no bright spots. Avoid the direct ingress of beams of sunlight by liming windows, for instance.

## Light level

Reducing light levels is an emergency measure to prevent feather pecking from getting worse. In reduced light chickens see less detail and will therefore peck less. However, since lower light levels can also make the chickens more fearful, other management measures should always be taken in addition to this measure.

## Red light

Adding red light is an emergency measure to prevent feather pecking from getting worse. Wounds become less visible and chickens are not able to see as many details. The disadvantage is that the general light level is significantly reduced, so the chickens could become more fearful. Therefore other management measures should always be taken in addition to this measure. Instead of using red bulbs, red shades could be placed over existing lights.





## Hygiene

### **Remove dead animals frequently**

Dead animals are pecked at, and as a result the chickens could learn cannibalism; dead animals are also a source of disease.

### **Check nests for dead animals**

Dead animals in the nests could be a source of E. coli. Sick animals are more likely to start featherpecking.

### **Keep waterlines clean**

Prevent mould and other pathogens by regularly cleaning the waterlines. The pipes are particularly susceptible to mould if the water is acidified.





## Supplementary feed

### Scattered grain

Cracked grain in combination with straw (possibly chopped) will keep the chickens occupied for a long time. With an automatic grain dosage system, grain can be scattered several times a day. **Note** that if more than 5 grams per hen per day is scattered, the feed formulation must be adjusted.

### Roughage

The chickens can be given various types of roughage. They can be given loose alfalfa, but it will last longer if it's given to them in bale form. Other possibilities include hay/straw, bread, sticks, roots, fodder beets and Christmas trees. Chickens will spend more time on roughage that contains edible parts.

### Gravel, grit

This can be scattered onto the litter or given in separate buckets.

### Salt in drinking water

One way to combat cannibalism is to add salt to the drinking water (1 gram/litre) for a period of one week. This does not help feather pecking.







## Bowel health

Regularly acidifying the water can improve bowel health. A similar effect can be achieved by providing an acidic product such as CCM or another silage. Bowel health can also be improved by providing roughage, such as grass, alfalfa and hay.

## De-worming

Excessive worm infestation can put birds' health out of balance, which can cause them to start pecking feathers. However, practical experience has shown that feather pecking often arises after a de-worming treatment. Be sparing with de-worming treatments and only de-worm when necessary. Check the manure regularly by taking a manure sample of twenty ordinary droppings and twenty droppings of caecal manure and having this tested. If more than 1000 *Ascaridia galli* eggs or more than ten hairworm eggs are found, Animal Health Services recommends de-worming.

## Poultry red mite

Poultry red mites cause discomfort and stress, which can lead to feather pecking. Therefore, infestations should be kept as small as possible. Hang up tubes containing a rolled-up piece of corrugated cardboard and check it regularly on mite infestations. A **good tip** is to mix some silica powder through some litter and spread it into a sandbox. Because chickens take sand baths, this will help to combat poultry red mite.

## Wounds

It is best to remove wounded birds from the flock. Birds that are too severely wounded should be euthanised. A sickpen can be made for the other wounded birds, either in the service area or by fencing off part of the bird area. Make sure there is water and feed in the sickpen, and collect the eggs regularly. In smaller henhouses, try treating wounds with a violet spray, birch tar oil, PHB spray (deer antler oil) or silver spray. This measure is difficult to carry out in very large houses. In small flocks, it is advisable to remove those chickens that are causing wound pecking and feather pecking in order to prevent escalation of the problem.







## Nutrition

### Sources of protein

Give feed with a sufficiently high protein content and a balanced amino acid profile. A raw protein content of approximately 16-17% is common for laying hens; and for broiler parent birds, 14-15% is common practice. Pecking behaviour increases when raw protein contents are less than 13%. If needed, milk powder or fishmeal can be provided.

### Minerals and vitamins

Feed must have minerals in sufficient amounts and in amounts that balance each other. Make sure that there is at least 0.18% sodium in the feed and that the chlorine content is at least 10% higher than the sodium content. Some of the zinc and selenium provided should preferably be given in organic form, because this is more easily digestible. In addition, make sure that there is a large amount of vitamin B complex (niacin and biotin).

### Structure

Pelleted feed is more likely to create problems with pecking behaviour than feed in mash form. However, it is important that mash is not too fine. Of course the structure of the laying feed needs to be good, but this is equally important for the rearing feed. Nutritionally speaking, the amount of non-digestible fibre should be increased, in particular through adding rough fibre.

### High-fibre feed

Feed that is sufficiently high in fibre, particularly rough non-water-soluble fibre, ensures that laying hens and broiler parent birds spend more time and energy on their feed and are therefore less likely to exhibit pecking behaviour. For laying hens, a standard feed can be diluted with sources of fibre by no more than approximately 10%; for broiler parent birds a rough fibre content of 4-7% is advisable. Beneficial sources of fibre include oat husks, straw, wheat meal, sunflower seed shells and alfalfa. If possible, add them as unground fibres to the feed, so that even the chickens that do not scratch in the litter will be able to ingest fibres.

### Prevent segregation of feed

If the feed is segregated, not all chickens will receive the same feed. This could mean that some animals receive too little of some nutrients, which will increase the chances of pecking behaviour. Good structure can help prevent the feed from segregating. Let the chickens completely empty the feeding trough once per day, so that there is no feed remaining that could be of uneven composition.

### Change as little as possible

Any change in feed could result in feather picking. Limit changes as much as possible and, if possible, make sure that the transition from one type of feed to another is gradual. Ideally, the first batch of feed that chickens are given at the laying farm should be of the same type and from the same manufacturer as the feed that they received during the rearing period.





## Behaviour

### Reduce fear in the animals

By being calm around the animals, you will have a calm flock free of stress, and you will reduce the chance of feather pecking. Research shows that white chickens in particular are sensitive to the farmer's behaviour. Move among the animals calmly, give them time to run away, talk to them and knock on the door before entering so they can hear that you are coming. By creating variation in the inspection visits (different colours of clothing, different people, taking different routes through the henhouses), you will improve the chickens' socialisation, which will mean that they are less easily stressed. Get the chickens used to human noises, perhaps by installing a radio in the henhouse. If you regularly change the position of the radio in the henhouse, the chickens will get used to change and they will become calmer.

### Keep hens and cocks together

In the case of broiler parent birds, a good mix of hens and cocks in the flock will ensure more calmness. But do make sure that the cocks do not mature too early. Adding cocks later will create a great deal of unrest in a flock of broiler parent birds, and as such it would perhaps be better to avoid this measure.

### Feeding trough length and feeding turns

Aggression relating to feeding can result in more damage. Particularly in the case of broiler parent birds, it is important that the feeding trough be long enough so that they can eat together comfortably. In addition, the feed must be quickly distributed over the entire feeding system, in less than four minutes. If needed, the lights can be turned out while distributing food. In addition, a spin feeder will stimulate scratching behaviour, which can have a preventative effect on injurious pecking behaviour. Skip-a-day feeding programmes (or 3-4 or 5-6) are less desirable in this regard, so it is important to feed every day.

### Reduce stocking density

It is difficult to achieve this in practice. Encouraging the use of the covered and outdoor runs will reduce the effective stocking density in the stall. In the case of broiler parent birds, mating behaviour improves when the stocking density is lower, decreasing the chance of the cock wounding the hen with its beak. It is particularly important that there are not too many cocks present during the 20-28 week period.





## Floor eggs

### Collect floor eggs frequently

Cloaca pecking often starts with pecking at hens that lay eggs outside the nests. Particularly early on in the laying period, it is important to collect floor eggs frequently, so as to discourage hens from laying eggs on the floor. If there are no eggs on the floor, it will not occur to other chickens as quickly to lay their own eggs next to it. Later in the production period, once the plumage around the cloaca has deteriorated, it is also important to keep the number of floor eggs low through frequent collection.

### Increase attractiveness of nests

Attract the birds to the nests with lights and water near the nests, improve accessibility by installing landing platforms and steps, etc. If necessary, install vertical partitions on the landing platforms, so that chickens are encouraged to use nests other than just those at the very front and very rear.

### Block off undesired nesting places

Block off corners by using old grates or a piece of soft fibreboard (create a 'round corner'). If needed, make the undesired nesting places particularly unattractive by placing additional lights there.

### Dark places

Place extra illumination in dark spots, for instance by hanging a string of LED lights under grates. Replace burnt-out bulbs regularly.

### Thin out litter layer

If the litter is completely removed, the chickens will not be able to lay eggs in it; but this can promote feather picking, so a compromise can be achieved by using a thinner litter layer.

### Add extra nests

In small henhouses, a separate block of nests can be placed in locations where a lot of floor eggs are laid. This can help train the chickens to lay eggs in the nests.





## Enrichment materials

### Roughage

Roughage will keep the animals busy. They can be given bales of hay or straw. Leave the twine around the bales if they are pulled apart too quickly. Alfalfa can be given in bales or in special racks.

### Scattered grain

If edible bits are found among the roughage, the birds will be more motivated to continue to scratch through the roughage. Cracked grain in combination with straw (possibly chopped) will keep the chickens occupied for a long time. It is best to scatter grain several times a day. An automated system can be used for this. **Note** that if more than 5 grams per hen per day is scattered, the feed formulation must be adjusted.

### Distribute pecking blocks

For instance, place one block per thousand chickens, either whole in the litter or in pieces on the wire floors. The blocks are not only enrichment material, they can also help to blunt sharp beaks through repeated use.

### Hang bunches of yellow or white twine or straw

The twine can also be provided in cages. It is necessary to replace them frequently (new bunches may need replacement sooner than you expect).

### alf-full bottles of water

Half-full bottles of water can be hung above the litter or in the covered veranda or outdoor run. The water in the bottles reflects light, and the chickens will peck at the reflections. The number of bottles to hang depends on what other measures have been taken.

### CDs

CDs can be hung above the litter, in the covered veranda or outdoor run. Chickens find the shiny surface appealing. The number of CDs to hang depends on what other measures have been taken. A shiny line of CDs in the outdoor run can scare off unwanted wild birds.

### Other materials

Variation in the materials will attract the animals to them. Other materials to try include footballs, old drinking cups, empty plastic tubes/pipes and wood shavings (not from toxic trees/shrubs).







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