

International Journal of Agriculture Extension and Social Development

Volume 8; SP-Issue 6; June 2025; Page No. 110-113

Received: 17-04-2025
Accepted: 19-05-2025

Indexed Journal
Peer Reviewed Journal

Cannibalism in poultry, a nuisance for layer farming

¹Dr. Mahmuda Malik, ¹Dr Poornima Gumasta, ²Dr Narendra Kumar, ³Dr Diptimayee Sahoo and ⁴Dr Safeeda Sultana Begum

¹Assistant Professor, Department of Veterinary Pathology, College of Veterinary & Animal Science, BASU, Patna, Bihar, India

²Professor & Head of the Department, Department of Veterinary Pathology, College of Veterinary & Animal Science, BASU, Patna, Bihar, India

³Assistant Professor, Department of Veterinary Pathology, Veterinary Clinical Complex, College of Veterinary & Animal Science, BASU, Patna, Bihar, India

⁴Assistant Professor, Department of Veterinary Clinical Medicine, Veterinary Clinical Complex, College of Veterinary & Animal Science, BASU, Patna, Bihar, India

DOI: <https://doi.org/10.33545/26180723.2025.v8.i6Sb.2066>

Corresponding Author: Dr. Mahmuda Malik

Abstract

Cannibalism in birds may arise from various stress induced factors including inadequate management practices, resulting aggressive behavior, pecking other birds every now and then. As pecking is a vice which the birds tends to follow in a herd very quickly, it might result in significant loss regarding the health and production of birds if not addressed at once. Various other factors may also stimulate cannibalism which includes, overcrowding, excessive lighting, genetics and deficiency of essential dietary nutrients. Layers with more than average body weight tends to have an exposed persistent cloacal mucosal membrane. Other alarming factors are lack of adequate feeding spaces, insufficient minerals and vitamins in diet, skin infection with injury and presence of a dead carcass inside the farm due to negligence of the farm attendant.

Keywords: Layer birds, cannibalism, vent pecking, mortality

Introduction

Layer farms are established specifically for egg production, unlike broiler farming, where the main target is to produce meat^[1]. Layer birds starts laying eggs from around 18 to 20 weeks of age and continues to lay up to 72 to 80 weeks. Layer farming has become a sustainable and a popular occupation for the people in rural India^[2]. With efficient managerial practices, successful disease prevention and handsome assistance from government, layer farming has become a potential source of income raising the standards of lives of innumerable small scale farmers. Poultry industry in India is expanding day by day meeting the increased demand for a reasonable and a nutritious source of protein fostering both health and rural development^[3].

India can be counted as one of the leading egg producers globally owing to the increased enthusiasm for layer farming due to rising per capita egg consumption by the health conscious people^[4]. The government of India grants monetary help to through various organization like National Livestock Mission (NLM) providing numerous financial aids various subsidies and initiatives to support and sustain the poultry industry. Such assistance from government powered by the enthusiasm and hard work of the farmers. Large commercial layer farmings have set up in various

states like Andhra Pradesh, Tamil Nadu, Maharastra, Telengana^[5] and Punjab. While small-scale and backyard poultry farming is also seen to be very popular amongst housewife and non-office goer of the household thus uplifting the family income and nutrition.

The advent of out grower schemes, integrated farm management and mechanization in layer farming has ameliorated the effectiveness and fruitfulness of establishing the poultry farming. The enthralling growth of towns and cities and the switch in the lifestyle have lead to a rising demand for eggs^[6], propelling the growth of layer farming. However, layer farming do came across hindrances like poultry epidemics which can influence both the production and trading of eggs and poultry meat. Inflated feed prices has been representing a major part of operative cost. Differences in the market prices can affect the general profit making. Uncompromising management practices are essential to prevent the biosecurity related problems.

Decreased egg production in layer farming can be affected by a number of behavioral problem amongst the bird^[7]. These matters may arise from environmental, nutritional or management factors. Some of the most common prevalent vices resulting decreased egg production are primarily cannibalism causing stress and injuries^[8]. Other commonly

seen vices ensuing reduced egg production are egg eating, toe plucking, feather pulling, broodiness and severe aggression towards the inmates.

In layer farming cannibalism is considered to be a significant issue that can result into substantial mortality and financial loss, by decline in the egg production following injury to the vent opening. In some cases, the extent of cannibalism is so profound that the visceral organs may also get consumed by the inmate birds of the flock. This behavior is depicted as severe pecking behavior, after following injuries, open wounds and even mortality [9].



Fig 1: Mortality in Layer birds due to severe cannibalism



Fig 2: Presence of injury on the cloaca



Fig 3: Severe hemorrhage with blood stained feather around pygostyle



Fig 4: Injury due to aggressive vent pecking with evisceration with presence of blood clot

A wide many type of cannibalism can be noticed like vent pecking, where birds starts pecking the cloaca and is widely seen egg laying, feather pulling in which the birds pluck and consume the feathers from toe and head pecking, which is very common in very young birds in crowded setting and lastly wound pecking, whereby the injured or weak birds are pecked by the stronger or dominant ones.

What causes cannibalistic behavior in layer birds?

Vent pecking or feather pecking is very common in poultry raised in litter based system. The propensity towards cannibalism is seen in poultry birds which do not get any opportunities to involve themselves in their inherent natural behavior, such as pecking and pulling the earth [10]. Limiting the inherent activities results in anxiety, boredom and aggression. Which eventually develops the commencement of a serious but still concerning forms of cannibalism.

High intensity of Light: Exceeding the lightning intensity lux levels or installation of flickering lights can cause anxiousness leading to undue stress and irritability within the group. The uneasiness caused may lead to pecking at one another, producing paramount injuries [11].

Literature shows that layer birds from different strains shows distinct behavior regarding feather and vent pecking [12].

Heavy and Healthy birds: Birds during its egg laying phase tends to have an exposed hyperemic tissues around the vent. The hyperemic cloacal membranes have a tendency to attract other birds resulting vent pecking. Poultry birds are easily attracted by red hue, so a bird with bleeding. Wounds can draw the unnecessary attention of the fellow birds resulting into more pecking, which may increase over time following high mortality among the layers.

Flock size: In an overcrowded poultry farm with inadequate space and feed, the birds tends to develop competition for their privilege, which may result into depiction of dominance and aggression over the submissive birds [13].

Nutritional studies: Studies shows that essential amino acids play on important role in the growth and development of poultry. A particular lack of Methionine can result in anxiety and distress among the layer birds [14].

Likewise, salt is also very essential as it for growth and development in poultry. Salt provides sodium chloride

which regulates the fluid balance, nerve function, contraction of the urogenital muscles and formation of the egg shell. In general salt is crucial in the productivity of layers. Poultry birds are fond of an oily secretion produced by the uropygial gland ^[15], that has a salt like flavor. This oily secretion has other function like cleaning the feathers and keeping it water resistant. If the diet is low in salt the birds begin to peck the uropygial glands.

Feeding space: The unavailability of feeding space is as important as providing a balanced. Insufficient feeding space may start unnecessary competition for feed resulting in injury ^[16].

A common theory advocates that birds peck each other's feather to acquire keratin which is believed to be beneficial for their gut microbes.

Common approach to reduce losses caused by Cannibalism

Implement alternative farming methods like free-range systems or battery cage rearing to prevent cannibalistic behavior.

Trimming of beak, which is a practice of removal of a part of the tip of the beak, so that the beak remains blunt and cause minimal injuries if pecked upon ^[17]. This procedure is widely practiced by layer farm owners, where the beaks of chicks is trimmed in day old chicks or 5 to 10 days old chick. Repetition of trimming of beak may also be performed at 5 to 8 weeks of age if the trimmed beak grows back an alarming size. Debeaking or beak trimming procedure includes removal of the half of the upper beak. Usually chicks are subjected to debeaking at a very young age as this age is appropriate as the nervous system is not yet fully developed hence reducing the pain and stress.

Flock size: A huge size of flock raised in a deep litter system with inadequate space heighten the likelihood of feather and vent pecking ^[18]. This situation may stimulate undue contention with display of dominance over one another ^[19]. When space is limited, competition for essential resources like feed, water, and nesting/roosting spots intensifies. This constant competition fuels aggression, as birds are forced into close proximity with many unfamiliar individuals. The normal cues for asserting dominance or submission are overwhelmed by the sheer number of interactions.

Selection of birds known to show less aggressive behavior is advisable to avoid injury in the flock by pecking. Genetic selection plays a significant role in preventing vent pecking among birds in a flock as it aims to raise a flock of birds with reduced proclivity for cannibalism ^[20]. Behaviors like feather pecking, vent pecking, and general aggression are influenced by a bird's genes. Research has shown that the heritability of feather pecking can be moderately high, indicating that these traits can be passed down from parents to offspring. In essence, genetic selection helps to reduce cannibalism by gradually shifting the genetic makeup of poultry populations towards a predisposition for less aggressive and more harmonious social behavior, ultimately leading to healthier and more productive flocks.

Provision of nesting sites can offer a secure and comfortable area for the birds to lay their eggs, thus protecting themselves from being chased and pulled by other birds unnecessarily. Another helpful tool to defend from

aggressive birds is to install a perch ^[21] at different heights in the farm, which will allow the birds to rest and avoid the confrontation with other birds ^[22]. Fitting of red coloured ribbon in various location across the farm, is another technique ^[23]. Bright red coloured ribbons helps divert the attention of the birds thus making it difficult for them to identify blood or everted mucosa from the vent, which may help in reducing the chances of cannibalism ^[24].

Birds have an inherent instinct to peck at the ground, whereby they feed themselves by digging into the soil, snipping leaves and catching insects ^[25]. When the birds are raised on a concrete surface, they are unable to fully engross in their natural behavior, leading to frustration. A lack of environmental stimulation leads to boredom and frustration in poultry. This boredom can manifest as abnormal behaviors, including excessive pecking at flockmates. A rich pecking ground offers continuous engagement, keeping the birds occupied and reducing the likelihood of them turning their attention to destructive pecking. Consequently, they tend to seek out activity which involve pecking and nibbling of softer areas of the innate birds, which result in chasing and puberty at the feathers and vents of other birds on the farm. If edible material is scattered on the pecking ground (e.g., grains, leafy greens), it encourages more active foraging and can increase the fiber content in their diet. High-fiber diets can make birds feel more content and satisfied, potentially reducing the drive to peck at others due to hunger or nutritional deficiencies.

In conclusion, effective cannibalism reduction in poultry relies on a holistic management strategy that combines careful genetic selection for calmer birds with comprehensive environmental enrichment and vigilant attention to welfare-friendly housing and husbandry practices. This integrated approach not only improves the well-being of the birds but also leads to more productive and sustainable poultry farming operations.

References

1. Pathak A, Tripathy AM, Singh V, Jahan T. Poultry farming in India: An overview. *e-planet*. 2022;20(1):83-9.
2. Sree EK, Nirmal TV, Reddy R, Reddy AD, Ventatia K. Status of backyard poultry farming among tribal community and profile of tribal farmers in West Godavery of Andhra Pradesh. *System*. 2017;19:4277.
3. Kumar M, Dhiya SP, Ratwan P. Backyard poultry farming in India: A tool for nutritional security and women empowerment. *Biological Rhythm Research*. 2021;52(10):1476-91.
4. Blokhuis HJ, Cepero R, Colin R, Elson A, Fiks van Niekerk T, Keeling L, *et al*. Welfare aspects of various systems of keeping laying hen. *FFSA Journal*. 2005;197:1-23.
5. Chaturvedani AK, Lal N, Khyalia NK, Pratap J. Empowering tribal women through backyard poultry in Bastar district of Chattisgarh. *Journal of Krishi Vigyan*. 2015;3(2):19-22.
6. Rehault-Godhert S, Guyot N, Nys Y. The Golden Egg: Nutritional value, Bioactivities and emerging benefits for human health. *Nutrients*. 2019;11(3):684.
7. Bestman M, Koene P, Wagenaar J. Influence of farm factors on the occurrence of feather pecking in the

- laying period. *Applied Animal Behaviour Science*. 2009;121:120-5.
8. McAdie TM, Keeling LJ. Effect of manipulating feathers of laying hens on the incidence of feather pecking and cannibalism. *Applied Animal Behaviour Science*. 2000;68(3):215-29.
 9. Jensen P, Keeling L, Schutz K, Anderson L, Mormed P, Brandstrom H, *et al*. Feather pecking in chicken is genetically related to behavior and developmental traits. *Physiology and Behaviour*. 2005;86(1-2):52-60.
 10. Rodenburg TB, van Krimpen MM, De Jong IC, De Haas EN, Kops MS, Riedstra BJ, *et al*. The prevention and control of feather pecking in laying hens; identifying the underlying principles. 2012;69(2):361-74.
 11. Pakhira MC, Biswas P, Roy DC, Ray M, Bera S, Jana PS, *et al*. Controlling feather pecking and cannibalism in laying hens without beak trimming in deep litter- A review. *Advances in Life Science*. 2016;5(10):3904-11.
 12. Nicol CJ, Gregory NG, Knowles TG, Parkman ID, Wilkins LJ. Differential effects of increased stocking density, mediated by increased flock size on feather pecking and aggression in laying hens. *Applied Animal Behaviour Sciences*. 1999;65(2):137-52.
 13. Michel V, Berk J, Bozakova N, Eijik J, Estevez I, Mirchena T, Relic R, *et al*. The relationships between damaging behaviour and health in laying hens. *Animals*. 2022;12(8):986.
 14. Baker P, Nicol C, Weeks C. The effect of hard pecking enrichment during rear on feather cover, feather pecking behavior and weal length in beak-trimmed and intact beak laying hen pullets. *Animals*. 2022;12(6):674.
 15. Potzsch CJ, Lewis K, Nicol CJ, Green LE. A cross-sectional study of the prevalence of vent pecking in laying hens in alternative systems and its associates with feather pecking, management and disease. *Applied Animal Behaviour Science*. 2001;74(4):259-72.
 16. Blokhuis HJ, van der Haar JW, Koole PG. Effects of beak trimming and floor type on feed consumption and body weight of pullets during rearing. *Poultry Science*. 1987;66(4):623-5.
 17. Hughes BO, Carmichael NL, Walker AW, Grigor PN. Low incidence of aggression in large flocks of laying hens. *Applied Animal Behaviour Science*. 1997;54(2-3):215-34.
 18. Craig JV, Biswas DK, Guhl AM. Agonistic behavior influenced by strangeness, crowding and heredity in female domestic fowl (*Gallus gallus*). *Animal Behaviour*. 1969;17(3):498-506.
 19. Newberry RC. *Welfare of the Laying Hen*. Vol-27. CAB International. Washington State University, Pullman; 2004. p. 239-57.
 20. Hocking PM, Channing CE, Robertson GW, Edmond A, Jones RB. Between breed genetic variation for welfare related behavioural traits in domestic fowl. *Applied Animal Behaviour Science*. 2004;89:85-105.
 21. Norring M, Kaukonen E, Valros A. The use of perches and platform by broiler chickens. *Applied Animal Behaviour Science*. 2016;184:91-6.
 22. Sirovnik J, Stratmann A, Gebhardt-Henrich S, Wurbel H, Toscano M. Feeding from perches in an aviary system reduces aggression and mortality in laying hens. *Applied Animal Behaviour Science*. 2028;202:53-62.
 23. Blokhuis HJ. The effect of a sudden change in floor type on pecking behavior in chicks. *Applied Animal Behaviour Science*. 1989;22(1):65-73.
 24. Jones B, Carmichel NL, Rayner E. Pecking preferences and pre-dispositions in domestic chicks. Implication for the development of environmental enrichment devices. *Applied Animal Behaviour Science*. 2000;64(4):291-312.
 25. Bowlby GMS. Some preliminary investigations into the effect on broilers. *World Poultry Science Journal*. 1957;13:214-26.