

Challenges to keep hens healthy in cage-free housing systems: endoparasites

Problem

Cage-free housing systems expose hens to manure that can lead to higher worm infection.

Solution

Between flocks the barn should be cleaned thoroughly to remove all manure. Worm eggs are very persistent against most disinfectant products used. Therefore, the poultry house is preferably heated using Thermokill. This technique is developed against Poultry Red Mites and kills remaining worm eggs as well.

During the production cycle parasitic monitoring is strongly recommended. Since not every type of worm is visible macroscopically during post-mortem examination (such as the damaging *Capillaria spp.*), faecal egg counts are favourable over post-mortem worm detection. Deworm if levels exceed a set threshold level.

Benefits

Monitoring worm infection prevents a sudden negative impact of a high worm burden and minimizes necessary treatments reducing residues in eggs and environment.

Practical recommendations

Perform a worm egg count every 4 weeks on a freshly mixed manure sample of at least 50 droppings. Five of these should be caecal droppings since the caeca harbour specific type of worms. The analysis is done by the Mc Master technique that is routinely performed in most laboratories. Deworm if egg counts per gram faeces (EPG) exceed: *Capillaria* EPG>50; *Ascaridia/Heterakis* EPG>500-1,000.



Figure 1: Mc Master Counting chamber. Quantification of the worm eggs infection (Source: Fair Poultry)

APPLICABILITY BOX

Theme

Animal husbandry, Farm management

Keywords

Laying hens health, worms, parasite control, monitoring, and evaluation, laying hens

Context

Transition to and operating cage-free and outdoor housing systems for laying hens

Application time

Worms' year-round

Required time

Collecting a faeces sample takes 15 minutes per house. Analysing time depending on the laboratory

Period of impact

Any age: worm infections usually start from 20 weeks of age

Equipment

Microscope and Mc Master analysis equipment for worm egg count

Best in

All cage-free housing systems: barn, free-range and organic production

Target audience

Farmers, farm advisors



Figure 2: A – The hen's faeces provide a lot of information on (proglottids of tapeworm) (Source: Roland Bronneberg). B – Faecal types. Left - caecal droppings (Source: Fair Poultry). C – Regular droppings (Source: Fair Poultry).

On-farm application

System approach

- Faeces monitoring of worms should be implemented as a management practice at regular intervals; for coccidiosis, at 2-week intervals at 3-5-7 weeks of age during rearing and at 18-20-22-24-26-28 weeks of age at the start of production, and for worms, at 16-20-24-28 weeks during the start of production, and thereafter, at 4–6-week intervals.
- Faeces monitoring is both qualitative and quantitative.
- During the round: by removing excess litter the amount of worm eggs will be reduced.
- Between rounds: Clean the house thoroughly with warm water and soap before disinfection.

Further information

Videos

On YouTube, one can easily find training material on how to perform faecal egg counts. The technique is the same for all species, although most films concern livestock and horses. The McMaster technique is the same, but the type of worms and their cut-off values are different. For a detailed practical video go to: <https://www.youtube.com/watch?v=ZptZZ1jigxM>

Further readings

A practical guide for parasitic diagnostics is Veterinary Clinical Parasitology by Anne M Zajac (author) and Gary A Conboy (author). 7th edition.

Weblinks

For more information about Thermokill: <https://vaneckbv.nl/en/products-services/red-mite-control>

About this practice abstract and Best Practice Hens

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Best Practice Hens: To support egg production in non-cage systems and improve animal welfare, a consortium consisting of 7 partners will develop Best Practices for Non-cage Egg Production Systems as a European Commission, DG SANTE pilot project. These Best Practices will provide practical support to egg producers to encourage them to convert from cage to non-cage systems, including organic production.

Project website: www.bestpracticehens.eu/

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