

Prerequisites for vaccinating pullets in cage-free systems: coccidiosis

Problem

Pullets need to be protected against 7 Eimeria strains, ideally using a live coccidiosis vaccine at day 1. The vaccine, however, does not always achieve the desired results. Some of the most common reasons are improper dosing and application and insufficient re-circulation of the vaccine strains.

Solution

Vaccinated birds need extra attention in the first three weeks post-vaccination to safeguard sufficient spread of the vaccine strains among all birds and the onset of immunity. Chick paper is used to optimize the re-circulation of the vaccine strain. The humidity of the circulating air should be high enough to keep the strains alive. After 3 weeks, the chick paper can be removed from the surface and can be spread in the litter of the house. Monitoring oocyst per gram faeces (OPG) is advisable to follow the coccidiosis development in time.

Benefits

Cherishing the coccidiosis vaccine strains will minimize the chance of a breakthrough of a field infection that can cause severe health issues. Faecal monitoring of OPG levels enhances early detection of a field strain break-through. In general, proper coccidiosis vaccination prevents young hens from developing clinical coccidiosis.

Practical recommendations

The chick paper should be placed on the entire floor surface on which the day-old-chicks are released. Feed should be directly spread over the paper to support ground surface pecking behaviour. The key is to leave the chick paper in place during the first 3 weeks of life. When pullets are released into the litter and the larger area of the barn, the chick paper can be spread through the house.

APPLICABILITY BOX

Theme

Animal husbandry

Keywords

Animal health and welfare, Coccidiosis vaccination, Chick paper, OPG, rearing phase

Context

Transition to and operating cage-free housing systems for pullets

Application time

Year-round

Period of impact

Pullet phase

Equipment

Chick paper

Best in

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

Target audience

Farmers, farm advisors



Figure 1. 2-week-old chick on chick paper. The paper clearly starts to disintegrate after 2 weeks Source: Fair Poultry



Picture 2: chick with coloured coccidiosis spray. From: Roland Bronneberg

On-farm application

System approach

- Application of the coccidiosis vaccine is generally performed at day 1 by spray, at the hatchery or on the farm. Please check the manufacturer's guidelines for the technical details of the method, such as dosage, spray volume, and colorant. It is important, however, that each chick picks up one full dose of all strains, that the vaccine can re-circulate in the flock during at least 3-4 weeks (chick paper) and that no chemical treatments are done that can stop or slow-down re-circulation, or even, inactivate vaccine strains.
- The re-cycling and efficacy of the coccidiosis vaccine and its individual strains can be evaluated by taking faecal samples at 2-week intervals (e.g., 3-5-7 weeks of age). Samples are examined microscopically, and oocyst numbers are counted using the Mc Master technique. Evaluation is both qualitative and quantitative. At the end of rearing (16 weeks), evaluation of a mixed faecal sample could be used as a final check for indications of field infection and/or proper vaccine-take.

Further information

Videos

For more information on the combination of a coccidial vaccine and bioshuttle: <https://www.thepoultrysite.com/news/2019/01/it-takes-two-coccidiosis-vaccines-effective-against-e-tenella-after-adequate-cycling>

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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