Earn money by battling subclinical coccidiosis!

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Abstract

In today's modern poultry farming coccidiosis is one of the most common parasitic diseases. Because most broiler feeds contain anticoccidial drugs, cases of clinical coccidiosis are rare. However subclinical coccidiosis is the most frequently diagnosed disease in broiler chickens (Cervantes, 2006). It is difficult to diagnose and treat subclinical coccidiosis because the birds appear normal although their performance (Feed conversion rate and body weight gain) is lower. Prevention through hygiene and control methods via medication must be used to minimize the negative economic impact of subclinical coccidiosis on broiler flock performance.

Major parameters for economical loss from coccidiosis

The clinical form coccidiosis manifests through prominent signs of mortality, weight loss, depressed animals, diarrhea or bloody faeces. In this case it's very obvious that these losses lead to direct costs. However due to the professional approach from farmers, vets, feed companies etc. to try to control or minimize prevalence of coccidiosis through vaccines, coccidiostatical additives etc., the sub-clinical coccidiosis will give rise to the highest proportion of the total economic losses (Williams, 1999).

The subclinical coccidiosis manifests mainly by poor weight gain and reduced efficiency of feed conversion rate (FCR). The FCR is one of the major economic parameters used worldwide to estimate profit/loss in the broiler industry. Several other bacterial and viral diseases get sometimes more *"time in the spotlights"* because of sudden attack and high mortality. However coccidiosis is a type of protozoal disease that causes maximum economic loss and has remained unattended, may be due to the subclinical form of the disease (Vermeulen *et al.*, 2001).

The overall comparison of economic traits for all types of poultry has revealed that loss is maximum due to reduced body weight gain, followed by increased feed conversion ratio (FCR) in the total loss due to subclinical coccidiosis (Bera et al.,2010).

So its needless to say that subclinical coccidiosis in a poultry flock has a very high negative and economical impact on the flock as well as for the poultry producer. Another predisposing factor is the confined host rearing conditions, which lead to an increase in the numbers of oocysts, which are ingested by poultry via the litter. When there's an outbreak, there is an immediate and considerable drop in production figures and the recovery and reestablishment period after treatment is slow. Some flocks never fully recover or regain their full production potential.

Economical impact

The models developed by Williams (1999) to estimate losses due to poultry subclinical coccidiosis can be a good guideline.

A:*Total Loss due to Reduced Body Weight Gain (=TLRBG)*

If considered that 80% of the broilers are suffering from sub-clinical coccidiosis (=RI, rate of incidence) and each bird leads to a reduction of 0,1 kg from the final live weight (=RBW, Reduced Body Weight gain), the model to use is:

[{(N° of birds) x (RI)} – mortality, n° of birds] x (RBW, kg) x (rate of poultry meat, €/kg)

Example: {(20.000 x 80%) – 500} x 0,1 x 0,80 = 1240€

B: *Total Loss due to Increased Feed Conversion (TLIFCR)*

If considered that 80% of the broilers are suffering from sub-clinical coccidiosis (=RI, rate of incidence) and each bird leads to an increased FCR of 0,1 (=DiffFCR), the model to use is:

[{(N° of birds) x (RI)} – mortality, n° of birds] x (LW, live weight per bird) x (DiffFCR,) x (CF, cost of broiler feed, €/kg)

Example: {(20.000 x 80%) – 500} x 2,2kg x 0,1 x 0,35€/kg = 1193,5€

So in this example the farmer's loss for one round is presented from two different points of view: lower income (meat price vs. a reduced body weight gain) and higher cost (feed price vs. increased feed conversion).

Based on the models of Williams(1999) it can be concluded that, with the given feed price and meat price in the example, the loss due to coccidiosis for parameter B (total loss due to increased feed conversion) is 0,06€ per bird or could yearly add up to 8354,5€.

Prevention through a well-considered hygiene program

Hence, it is a recognized fact that treatment alone cannot prevent the economical losses. It is well established within the poultry sector that the only choice is therefore prevention of the disease through a well-considered hygiene program that should be a symbiosis between veterinary support, feed-additives and a strict protocol for cleaning and disinfecting! CID LINES tackles the problem of coccidiosis with KENOCOX (proven efficacy according to DVG guidelines, Germany).

In the CID LINES protocol for cleaning and disinfecting a poultry unit it is crucial the instructions are executed correctly and in the right order. The basic guidelines are as follows:

1. Dry cleaning → Removal of litter, feed residues and manure
2. Apply detergent → Foam 3% BIOGEL, 0,3L solution/m² (saves time and increases efficacy of main cleaning)
3. Main cleaning → High pressure, 12-30L/min. All surfaces! High pressure and hot water saves time and money.
4. Let DRY → When dry, there is no further dilution possible of the disinfectant!
5. Viual control → DIRT cannot be disinfected!
6. General Disinfection → Spray or foam 0,5% VIROCID, 0,3L solution/m².
7. Anti Coccidiosis disinfection → Spray or foam 4% KENOCOX, 0,4L solution/m². Minimum 2h contact time!

References:

Williams, 1999. A compartmentalized model for the estimation of the cost of coccidiosis in the world's chicken production industry.

Vermeulen, et al. 2001. Control of coccidiosis in chickens by vaccination

Cervantes, H., 2006. Incidence of subclinical diseases and pathological conditions in clinically broilers from 3 production complexes sorted by sex and age.

Bera, et al. 2010. Evaluation of economic losses due to coccidiosis in poultry industry in India.