

Finding a natural solution to manage coccidiosis in your calves

Coccidiosis is an important issue for calves. It is a growing pathology due to protozoa, for example Eimeria, which are parasites of the intestinal tract. They develop inside the calf's intestinal epithelium and cause severe damage to enterocytes.

To answer the global trend to reduce our usage of antibiotics, medicines and coccidiostats, innovative and natural solutions have been developed to prevent and help manage coccidiosis.

by Morgane Piriou,
Marketing Manager, Specialties, Wisium.
www.wisium.com

Coccidiosis is a disease caused by parasitic coccidian protozoa that sporulate in the gut of animals, infect gut cells and multiply in it. Young stock is particularly sensitive to this infection, especially between 2-12 months of age. Coccidiosis causes lesions in the gut wall, which reduce nutrient absorption, fragilise the immunity of calves and foster bacterial disorders in the intestine. Absorption of nutrients is then significantly decreased, leading to growth delays, which can be irreversible at this early stage.

The main symptoms of this disease are diarrhoeas occurring after three weeks of age, without an increase in body temperature. Indeed, diarrhoea occurs at the end of the reproductive cycle of Eimeria, taking place in the large intestine. The infection can also cause severe dehydration and, in some instances, death.



Sub-acute coccidiosis often goes unnoticed but hampers the growth of young animals. This growth deficiency cannot be compensated for in later phases of animal development and eventually reduces the dairy performance of mature cows later on.

Coccidiosis in ruminants is generally underestimated because it is hard to detect the subclinical form of the pathology. This form really impacts performance, in particular the average daily gain which is a crucial parameter in calves, as already mentioned, as it is directly linked to future performance and is usually hard to recover.

Adults are immune to coccidiosis and they are always excreting oocysts, which is an important risk to the younger animals. The challenge is to maintain contamination below a level generating economic losses. It is thus important to adapt some preventive

management practices like the separation of animals according to their age. It is also possible to strengthen prevention via feed supplementation.

Prevention with plant extracts

A unique association of four plant extracts, which have been selected for their synergistic action in the gut has been developed and tested in calves. Contrary to medicine treatment, phytotherapy solutions do not induce resistance, nor risk of cross-contamination in the production plant.

In addition, as opposed to coccidiostats, this plant extracts combination will not have a direct action on oocysts, but on the whole intestinal tract.

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Fig. 1. Animals positive for coccidiosis.

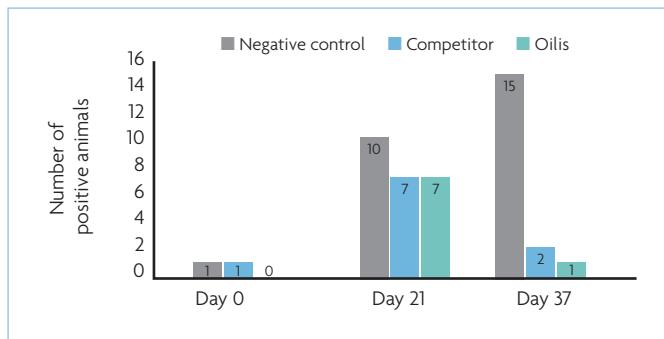
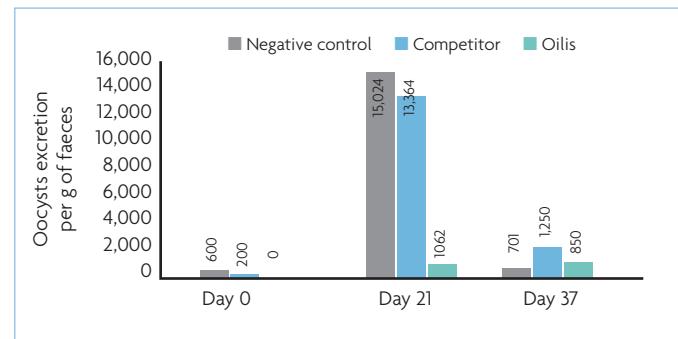


Fig. 2. Oocysts excretion per gram of faeces.



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The different plant extracts will contribute to create a non-favourable environment for the development of oocysts, and at the same time participate in a better recovery of potential intestinal lesions.

In order to demonstrate the positive effect of this combination of plant extracts, various trials were run in R&D facilities and also in the field.

Trial results

Here after, field trial results from the south west region of France are presented. A total of 135 calves of 10-15 days of age were divided into three homogenous groups of 45 animals. Animals did not receive any antibiotic treatment. They were raised in the same house (open air), separated into two rooms of seven collective compartments each (five animals per case).

The trial ran for a period of 37 days. The coccidiosis challenge was induced naturally by no disinfection of the building either before the entry of the animals or during the trial. Calves were fed with milk replacer, distributed with a bucket twice a day (morning and evening).

The negative control group (A) received a control diet without any coccidiostat supplementation, a positive control group (B) received the standard diet plus a

	A: Negative control	B: Plant extracts	C: Oilis (Wisium)
Initial body weight (kg)	57.6	56.4	54.0
ADG 0-50d (kg)	0.856	0.992	1.012

Table 1. Weight and average daily gain results.

competitor product (other plant extracts at 4.5g/animal/day into the milk) and Wisium group (C) received the control diet plus the plant extract combination (in its dispersible form) at 5g/animal/day.

In terms of zootechnical performance, the results were positive for both groups with plant extracts compared to the negative control, with a higher average daily gain (+156g vs control group) observed for the Wisium group (Table 1).

Coproscopy analysis on 20 calves per group were undertaken at days 0, 21, and 37 in order to measure the number of positive animals for coccidiosis (Fig. 1) and the oocysts excretion per gram of faeces (Fig. 2).

A decrease in the number of positive animals for coccidiosis is observed; at the excretion peak (21 days) the number of positive animals in the Oilis group is 30% lower than the control group.

A reduction of oocysts excretion is observed even after the suspension of the prevention (day 0-30).

Despite the fact that *Eimeria* strains are numerous and specific to each species, we observed positive results in the reduction of oocyst excretion and an improvement in growth performances, which is critical in those early stages of life.

An efficient tool

More than 90% of dairy herds in the intensive production model are positive to coccidiosis, with a permanent risk of negative impacts on the animals' performance. By working with the right combination of plant extracts, it is possible to have a 360°C approach to tackle the different aspects of coccidiosis.

Oilis offers a natural and efficient solution to manage the risk of coccidiosis thanks to its plant extracts combination acting in synergy to help protect the intestinal epithelium and contributing to reinforce the natural defences of the animal. ■