

Introduction

Vaccination has been developed over the years to counter avian coccidiosis, however, its effectiveness varies, and it is difficult to exploit due in particular to the young age of chickens at slaughter. Cashew nutshell liquid (CNSL) supplements have shown beneficial effects on growth performance and anticoccidial effects in *Eimeria*-challenged broilers. However, CNSL effects during an *Eimeria* infection in vaccinated chickens against coccidiosis need to be determined especially for organic production.

Objective

Evaluate the anticoccidial effects of Calica+, a CNSL-based supplement, under vaccination conditions in broilers.

Methods

The use of animals was approved by the CRSAD Animal Ethics Committee (CPA-CRSAD) and all procedures were performed according to the guidelines of the Canadian Council on Animal Care. The trial was conducted at CRSAD, Deschambault, Quebec, Canada.

1,760 Cobb 500 males.
55 birds per pen, 8 pens per treatment.
Oral *Eimeria* infection with 200,000 sporulated oocysts of mixed *Eimeria* species harvested from field isolates at day 14.

Data were analyzed using a mixed model including treatment as fixed effect, and block, representing the section of the building, as random effect. Comparisons between pairs were made using Student's test. Data from lesion scores of coccidiosis were analyzed by categorical analysis and Pearson's chi-square tests were used for frequency comparisons for each score between treatments.

Table 1. Treatments

Treatments	Description	Challenge
BC	Blank control, no treatment	No
NC	Negative control, no treatment	Yes
PC	Positive control, Monensin/Nicarbazin	Yes
Calica+	Calica+	Yes

Results

1. Calica+ improves growth performance in broilers

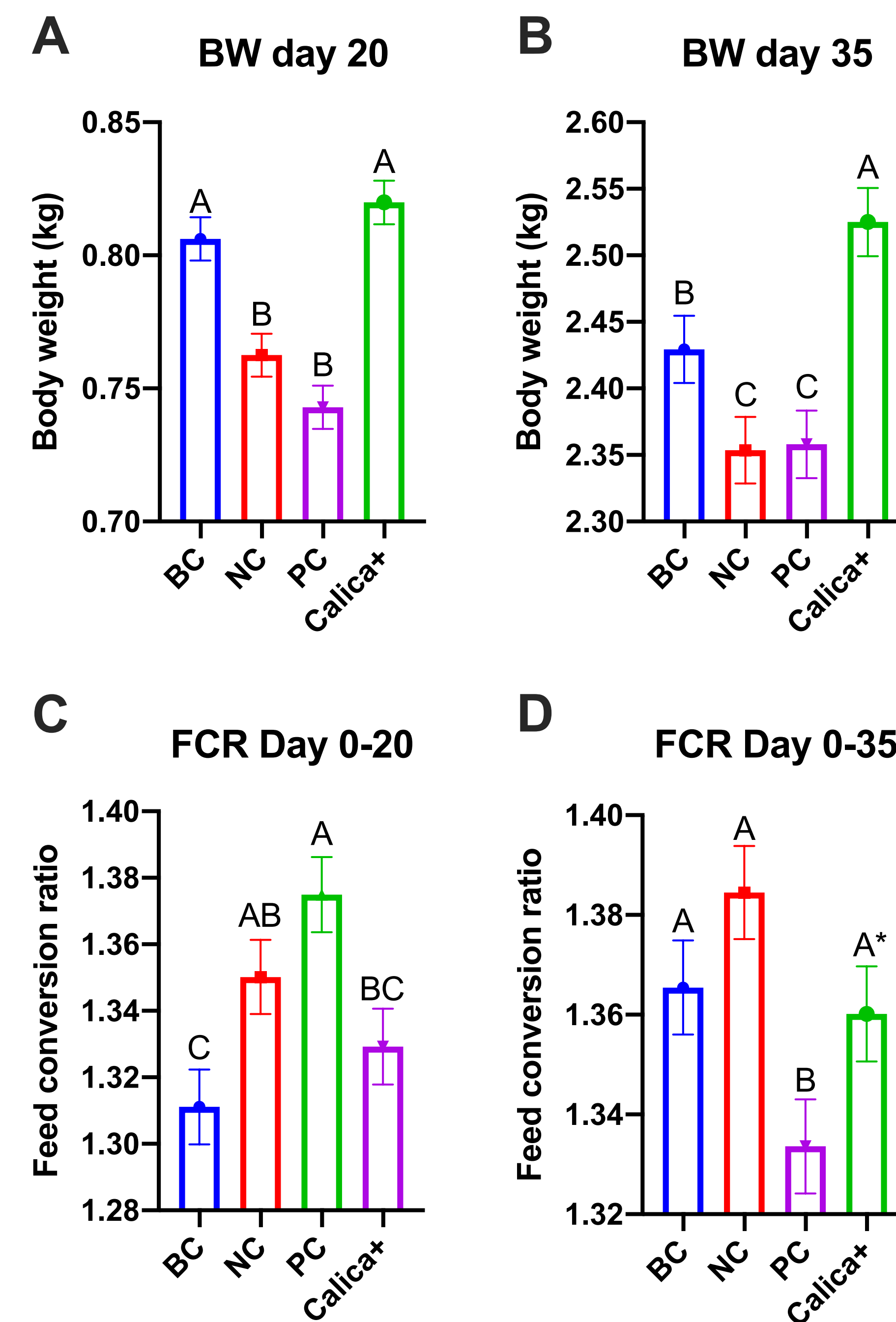


Figure 1. (A-B) Body weight (BW) at day 20 and day 35, and (C-D) feed conversion ratio (FCR) for the 20 first days and for the whole trial. Bars show least square means ± standard errors. Treatments not connected by same letter are significantly different, with $p < 0.05$. *shows a trend ($p < 0.1$) vs negative control. BC, blank control; NC, negative control; PC, positive control.

2. Calica+ shows anticoccidial effect in broilers

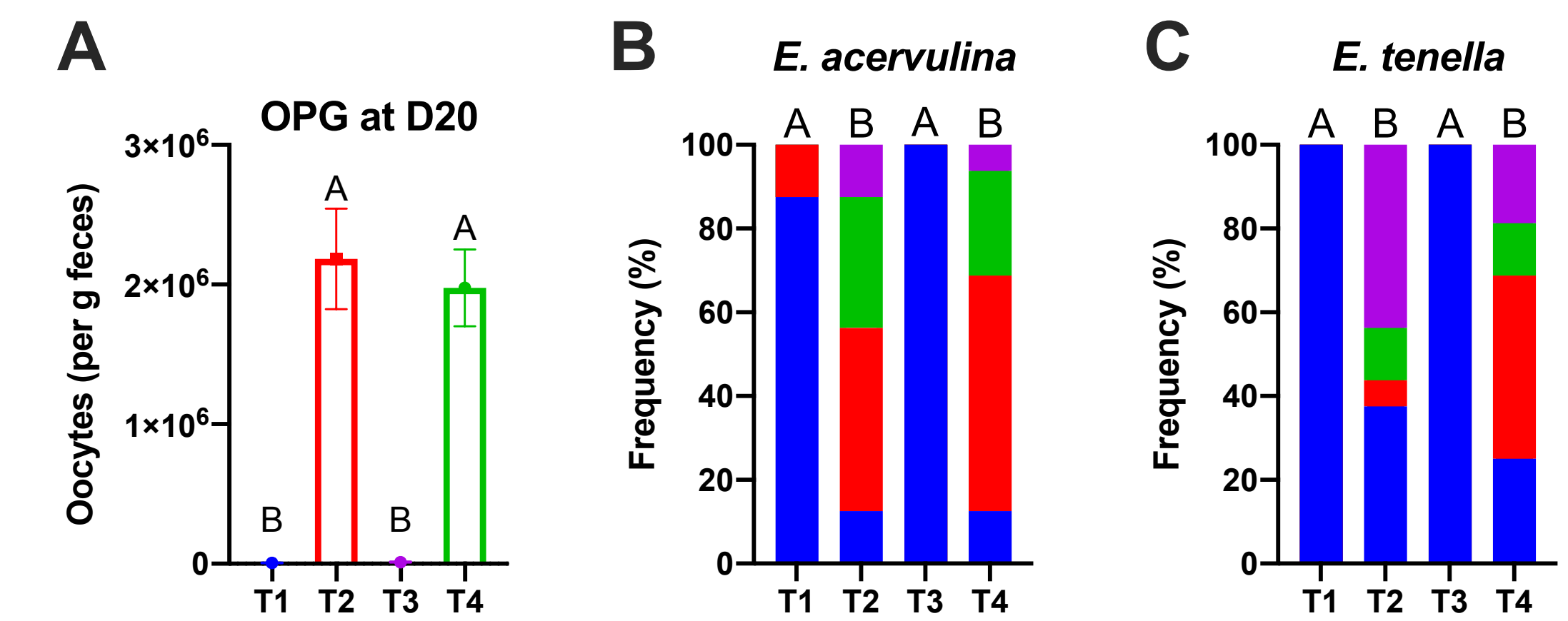


Figure 2. (A) Oocysts per gram of feces (OPG) at 20 days of age. (B) *Eimeria acervulina* and (C) *Eimeria tenella* intestinal lesions at 21 days of age. Bars show least square means ± standard errors. Treatments not connected by same letter are significantly different, with $p < 0.05$. BC, blank control; NC, negative control; PC, positive control.

Conclusion

- In summary, the CNSL-based formulation Calica+ showed beneficial growth performance and anticoccidial effects under vaccination conditions against coccidiosis.
- This organic feed additive could be involved in an anticoccidiosis strategy that includes vaccination.

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