

## News &amp; Comments

## The Importance of Quillaja and Yucca QY in Antibiotic-free Production Systems

Zhiqin Zheng

One of the most important illnesses harming the world's chicken output continues to be coccidiosis. It is well known that *Eimeria* parasite infections affect chicken growth, feed efficiency, mortality, and susceptibility to various diseases in any setting where they are raised. The American industry has depended on older, chemically manufactured anticoccidials (referred to as "chemicals") and live coccidiosis vaccines to suppress *Eimeria* infections in the absence of ionophore-based preventative initiatives. The goal of the current experiment was to assess the effects of feeding three chemical anticoccidial programs—often employed in American production—concurrently with the quillaja and yucca saponin combination (QY).

The *Quillaja saponaria* trees and *Yucca schidigera* plants used to make the quillaja and yucca-based products tested in this set of trials. The anticoccidial medications and coccidiosis vaccination tested in these studies are standard treatments for coccidiosis in the USA. All of the birds in these trials were raised on used, built-up litter, as is customary in US commercial production. Considering that the litter settings used in each trial were intended to combat an intestinal illness. Data from 2 trials that were collected throughout the winter of 2020 were used in the statistical analysis.

The lesion scores collected for unmedicated controls at 21 and 28 days show that these tests resulted in a significant intestinal coccidiosis challenge. All medical interventions considerably reduced mortality: but, with immunization, such differences were not seen. The differences between the chemical programs were not statistically significant, but they were all statistically distinct from the VAC, which did not differ from the control. In these trials, QY was found to lower intestinal lesion scores for all chemical treatments and the coccidiosis vaccination, with reductions in each case of about 50%. These findings are consistent with earlier research reporting the anticoccidial properties of this saponin combination. Results show that the efficiency of QY on *Eimeria* is likely independent of the anticoccidial approach with which it is used. They further extend these conclusions to encompass the chemical products used in these studies. Additionally, they suggest that the reduction of *Eimeria* or other pathogens in the colon has little bearing on the effects of QY on nutrient digestibility.

To assess the impact of conventional anticoccidial programs utilized in American antibiotic-free (never used antibiotics) production, a disease-challenged floor pen model was used. In comparison to controls, the use of chemically produced anticoccidials decreased the severity of coccidial lesions and enhanced zootechnical performance. A partially attenuated live coccidiosis vaccination, however, did



not have the same impact on growth performance or the number of lesions. For each program under evaluation, the addition of a QY saponin combination dramatically decreased the coccidial lesion scores and improved body weight, feed conversion, and mortality. These findings highlight the significance of QY in production systems devoid of antibiotics.

#### **JOURNAL REFERENCE**

K.W. Bafundo, I. Duerr, J.L. McNaughton and L. Gomez, 2022. The influence of a quillaja and yucca combination on growth performance and lesion scores of broilers administered chemical anticoccidials or a live coccidiosis vaccine. *Int. J. Poult. Sci.*, 21: 50-56.

#### **KEYWORDS**

Quillaja and yucca combination, coccidiosis, Eimeria, lesion scores, zootechnical performance

