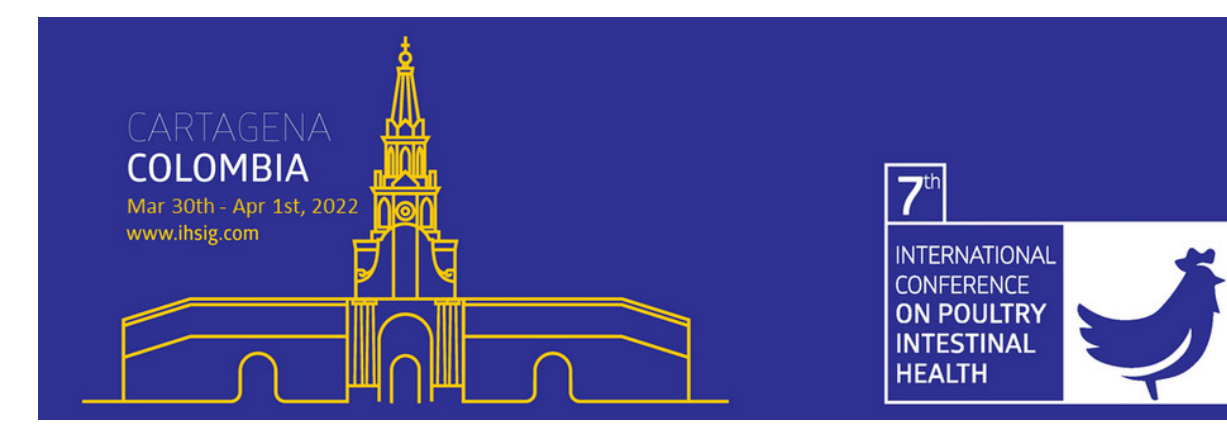


Comparative study between a saponin-based solution and synthetic coccidiostats in the management of coccidiosis

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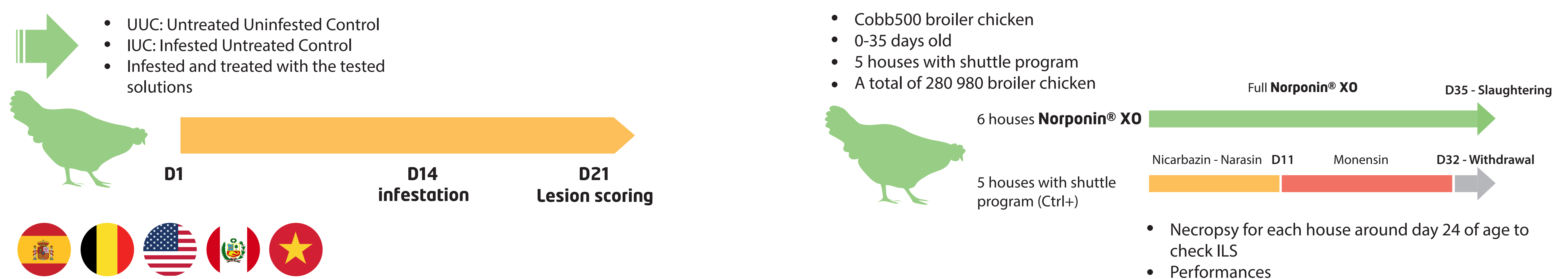
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Introduction

One of the diseases that seriously impact the intestinal health of broilers is coccidiosis. To limit its negative effect on the intestinal health and productivity of chickens, chemoprevention has been used and is still being used with varying degrees of success. However, regulation and societal demands for the industry to limit the use of synthetic inputs, mainly antibiotics, and ionophores, in poultry feeds pushed poultry producers to look for a natural alternative that can provide the same efficacy as the conventional coccidiosis management solutions. The objective of this study was to assess the effect of a saponin-based alternative solution, Norponin XO[®], and compare its efficacy to the synthetic conventionally used solutions.

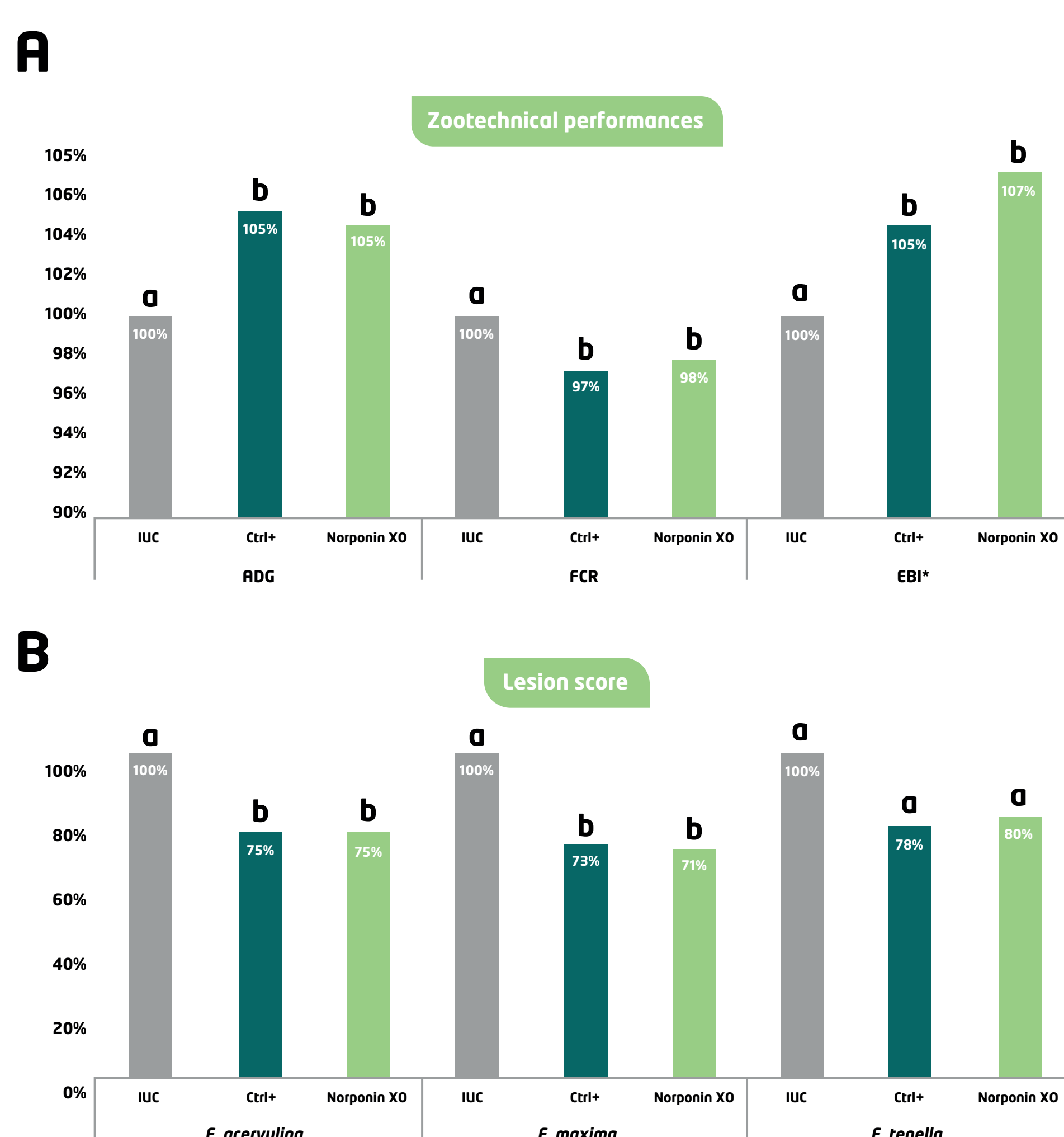
Material and methods

To evaluate the efficacy of Norponin XO[®] supplementation and to compare it to conventional solutions to manage coccidiosis in broilers, two types of experimental models were used. The first one consisted of a series of trials in experimental facilities with *Eimeria* infestation. The experimental unit in this model was the cage (figure 1A). Chickens of the infested groups were experimentally infested at d 14 with an inoculum of sporulated oocysts of *E.acervulina*, *E.maxima* and *E.tenella*. At d21, growth performances were monitored and intestinal lesion scores assessed. The second model consisted of a supplementation in commercial conditions where the experimental unit was the house with an environmental *Eimeria* infestation (Figure 1B). One group of broilers was raised with Norponin XO supplementation at 250 ppm in feed (NPXO houses) and compared to the second group of broilers that were raised with different coccidiostats used according to manufacturer recommendations (COC houses). Intestinal lesions scores (ILS) were monitored around D22 by sampling 5 chickens from each house and growth performances were recorded at the end of the rearing period (D35 to d 42).



Results

1 - Experimental infestation model



2 - In field model

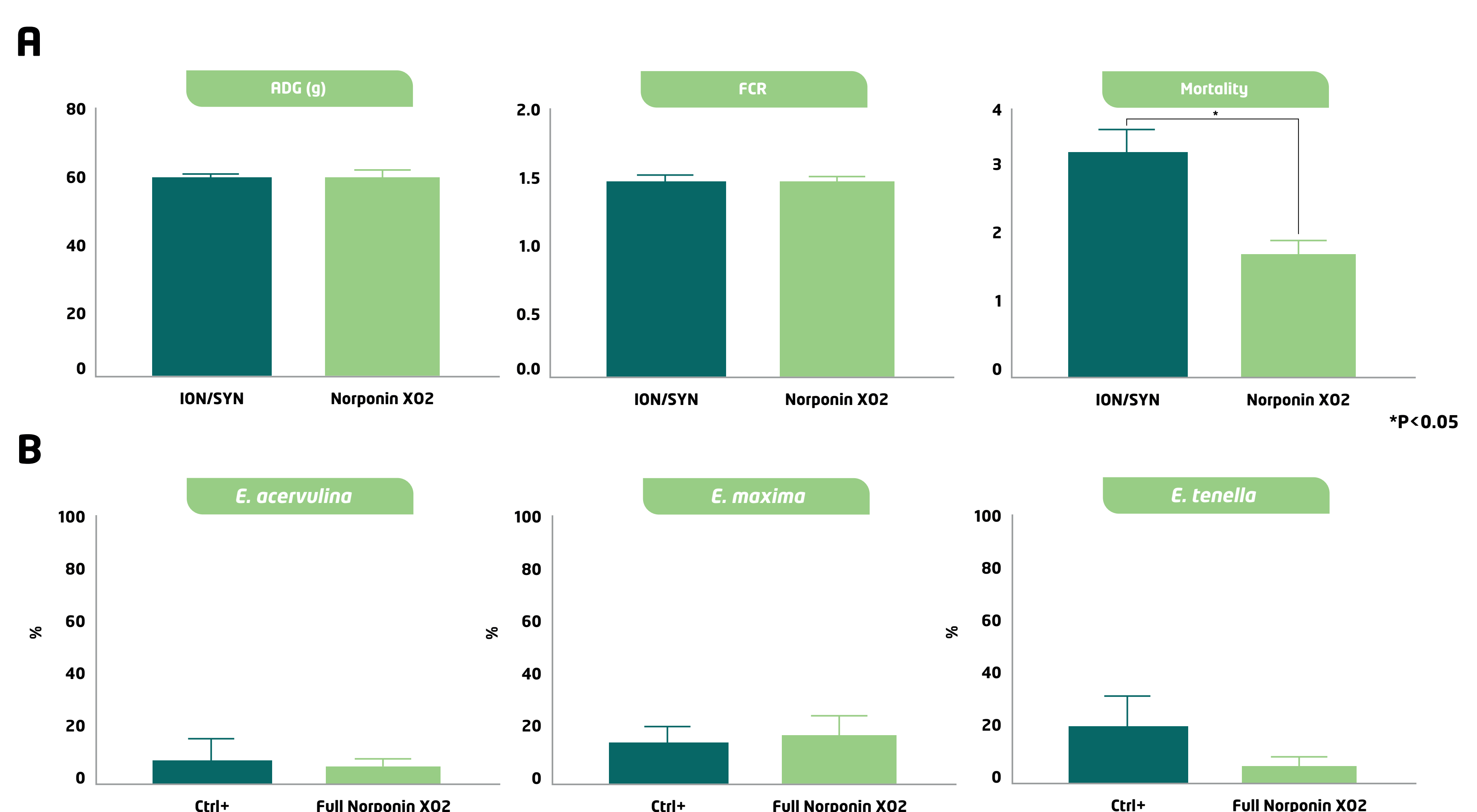


Figure 1: A) Metanalysis of zootechnical performances results. B) Intestinal lesion score (Johnson & Reid evaluation method). Data with different letters are statistically different p<0,05

Figure 2: A) Zootechnical performances results. B) Intestinal lesion score appearance (Johnson & Reid evaluation method). *P < 0 ,05

The results of the first experimental model showed that both coccidiostats and NPXO2 supplementation were able to reduce significantly ILS related to *Eimeria spp.* Infestation (Figure 2A) and to maintain growth performances (Figure 2B). In the second experiment, in addition to the fact that NPXO2 supplementation was as efficient as conventional tools in the management of coccidiosis and maintaining growth performances, NPXO2 supplemented broilers showed lower mortality rates.

Conclusion

The results obtained from these two models show that a natural solution, namely Norponin XO2[®], is as efficient as a synthetic solution in the management of coccidiosis in broilers. Indeed, these results support the thesis that sustainable management of intestinal health with 100% natural solution while meeting the regulatory and societal demands to ban synthetic intrants is possible.