

EVALUATION UNDER FIELD CONDITIONS OF THE SAFETY AND THE EFFICACY OF GUMBOHATCH® VACCINE ADMINISTERED BY SUBCUTANEOUS ROUTE AGAINST INFECTIOUS BURSAL DISEASE

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INTRODUCTION

GUMBOHATCH® is a new immune-complex vaccine against Infectious bursal disease (IBD) developed by HIPRA (Spain).

The present multicenter, positive-controlled and blind clinical trial was performed with the aim to evaluate its safety and efficacy when administered by subcutaneous route under field conditions.

MATERIALS & METHODS

A total of 160,731 one-day-old chicks were vaccinated by subcutaneous route with GUMBOHATCH® (n= 77,152) or with a commercial IBD-complex vaccine (n=83,579) as a reference vaccine, following the manufacturer instructions.

After vaccination chicks were distributed to 2 commercial broiler farms in France and to one farm in Belgium. In each farm the two groups were housed in separate units under identical conditions and monitored up to the end of rearing (35 days of live). Several safety and efficacy parameters were evaluated during this period.

Blood sampling and necropsy of 15 chicks per group and farm were performed at different time points. Antibody titers to IBD virus were determined with CIVTEST® AVI IBD (HIPRA). During necropsies macroscopic bursa lesions were evaluated and bursal imprints in FTA cards were collected for PCR analysis.

Data from the three farms was analyzed altogether.

RESULTS

SAFETY

No adverse reactions to any of the two vaccines were observed.

Similar hatchability, body weight after hatching, European Production Efficiency Factor and Ratio Bursa-to-Body weight (BB ratio) was observed in both groups. Overall incidence of bursa lesions was low and similar in both groups.

EFFICACY

No clinical outbreak of IBD occurred in any farm. However, PCR results from bursal imprints evidenced replication of the vaccine virus from day 21 onwards in both groups, coinciding with a progressive decrease of the BB ratio (Figure 1).

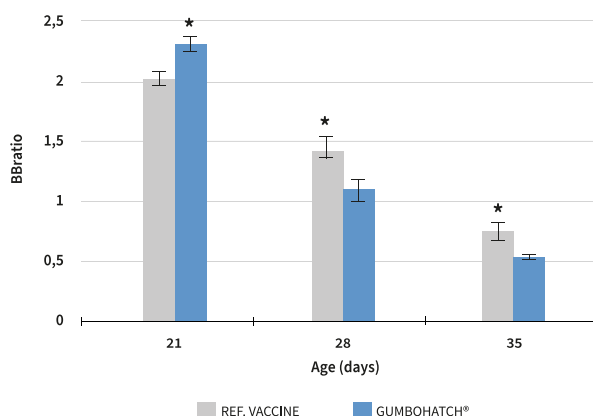


Figure 1 Evolution of Bursa-to-body weight ratio (BB ratio) (mean ± SEM)

*Statistically significant differences ($p < 0.05$)

The evolution of antibody titers to IBD virus after vaccination followed a similar pattern in both groups, with a progressive decrease of maternally-derived antibodies between days 0 and 21, followed by a fast increase of vaccine-induced antibodies from day 28 onwards up to the end of rearing. Statistically significant differences ($p < 0.05$) in vaccine-induced antibody titers were detected on days 28 and 35 in favor of GUMBOHATCH® group this evidencing a faster protection (Figure 2).

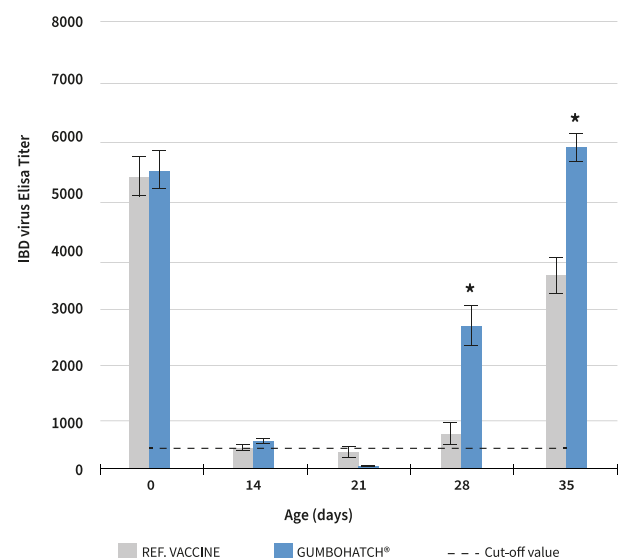


Figure 2 Evolution of serum antibody titers to IBD Virus; ELISA titer (mean ± SEM) (cut-off value = 357)

*Statistically significant differences ($p < 0.05$)

Similar results on performance parameters such as body weight gain and feed conversion rate were observed in both groups.

CONCLUSIONS

The results obtained in this study draw the conclusion that vaccination with GUMBOHATCH® is safe and confers a fast and good protection against IBD for the whole productive cycle of broiler chicks when administered by subcutaneous route under field conditions.