The **Reference** in **Prevention** for **Animal Health**

GUMBOHATCH® EVALUATION IN A MULTI-FARM FOLLOW-UP TRIAL IN SPAIN

OBJECTIVE

The present multi-farm follow-up trial was performed with the aim of evaluating the safety and efficacy of GUMBOHATCH® when administered via the in-ovo route under field conditions within a large company in Spain.

MATERIAL & METHODS

During the period from 18/09 to 01/10/2020, a total of 238,170 chicks was vaccinated in ovo (18 days of incubation) with GUMBOHATCH®, following the manufacturer's instructions. The chicks belonged to different parent stocks and were distributed between 3 different farms as follows: Farm A (59,976); Farm B (23,358) and Farm C (154,836). On each farm, one, two or three houses were monitored up to the end of rearing. Several safety and efficacy parameters were evaluated during this period. Blood sampling and necropsy of 15 chicks per house or farm were performed at different time points. Antibody titres to the IBD virus were determined using CIVTEST® AVI IBD (HIPRA). During necropsies, bursal imprints on FTA cards were collected for PCR analysis from 27 days of age.

Productive parameters from the 3 farms were compared with the previous four cycles (1 year), parameters within the farm and with the same period (September-October) in 2019 when animals were vaccinated with a standard-formulated immune complex vaccine. Feed conversion rate was corrected by average slaughter weight (2.2 kg). Descriptive in continuous variables were shown as mean values. A linear model was used to examine the effect of the vaccine on the different productive parameters, considering farm as a random effect and using the statistical program package R v4.0. A probability level of $p < 0.05$ was chosen as the limit for statistical significance in all tests.

RESULTS

SAFETY

No adverse reactions to GUMBOHATCH® were observed.
Similar hatchability and body weight after hatching were observed in all batches.
Bursa size scores at 28 and 35 days ranged from 6 to 4 as expected. Expected macroscopic signs of vaccine virus replication were observed in some of the bursas evaluated.

EFFICACY

PCR results from bursal imprints evidenced replication of the vaccine virus from day 27-28 onwards in all houses. The evolution of antibody titres to the IBD virus after vaccination followed a similar pattern in all farms and houses, showing a rapid increase in vaccine-induced antibodies from day 28 onwards up to the end of rearing (Figure 1).

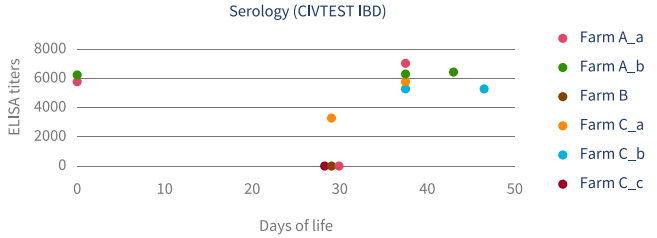

Figure 1. Evolution of serum antibody titres to the IBD Virus (ELISA titre mean; cut-off value =357) until the end of rearing (44 days of life).

A comparison with productive parameters from the previous four cycles and the same period in 2019 is shown in Tables 1 and 2, respectively. In both cases, a trend towards a better conversion rate (FCR) and higher average daily gain (ADG) was observed in the batches vaccinated with GUMBOHATCH® compared with the standard-formulated immune complex vaccine.

Productive parameter	Standard immune complex vaccine	GUMBOHATCH®	%	P-value
ADG	58.95	+3.53	+5.99	0.046
Total Mortality (%)	5.15	-1.84 pts %		0.287
IEP	312.9	+19.09	+6.11	0.110
FCR 2.200	1.63	-0.12	-7.51	0.058

Table 1. Comparison of productive parameters between GUMBOHATCH® and the standard immune complex vaccine with the previous four cycles.

Productive parameter	Standard immune complex vaccine	GUMBOHATCH®	%	P-value
ADG	60.42	+2.06	+3.41	0.074
Total Mortality (%)	4.99	-1.68 pts %		0.115
IEP	328.53	+3.46	+1.05	0.640
FCR 2.200	1.6	-0.09	-5.63	0.086

Table 2. Comparison of productive parameters between GUMBOHATCH® and the standard immune complex vaccine in the same period (2019 vs 2020).

CONCLUSIONS

The results obtained in this study allow the conclusion to be drawn that vaccination with GUMBOHATCH® is safe and confers good protection (both humoral and by competitive exclusion) against IBD when administered via the in-ovo route under field conditions. Comparison of productive parameters with previous flocks vaccinated with a standard-formulated immune complex vaccine also showed a better performance in the case of batches vaccinated with GUMBOHATCH®.