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

COMPARISON BETWEEN GUMBOHATCH® AND A STANDARD-FORMULATED IMMUNE COMPLEX VACCINE ON A COMMERCIAL BROILER FARM IN SPAIN_1

OBJECTIVE

The present multicentre trial was performed with the aim of comparing the safety and efficacy of GUMBOHATCH® when administered via the in ovo route under field conditions compared with a standar-formulated immune complex vaccine in Spain.

MATERIAL & METHODS

A total of 21,134 chicks from a breeder flock of 25 weeks of age was vaccinated in ovo (18 days of incubation) with GUMBOHATCH® and placed in house B of a farm. Four days later, a total of 21,870 chicks from a breeder flock of 33 weeks of age was also vaccinated in ovo in the same hatchery with a standard formulated immune complex vaccine and placed in house A of the same farm.

Both groups were reared under identical conditions and monitored up to the end of rearing (48 and 49 days of life, respectively). Several safety and efficacy parameters were evaluated during this period.

Blood sampling (15 chicks per group) and necropsy (8 chicks per group) were performed at different time points from 25 days of life. Antibody titres to the IBD virus were determined using CIVTEST® AVI IBD (HIPRA). During necropsies, bursa size (HIPRA bursameter) and macroscopic bursal lesions were evaluated. Bursal imprints on FTA cards were collected for PCR analysis.

RESULTS

SAFETY

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

Similar hatchability and body weight after hatching were also observed in both groups.

The sizes of the bursas were within the expected range for broilers vaccinated with a live attenuated virus (expected size at 4-5 weeks of age: 4-6; Figure 1). Expected macroscopic signs of vaccine virus replication were observed in some of the bursas evaluated.

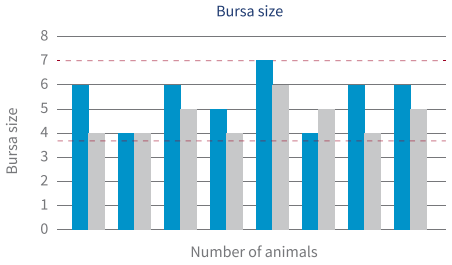

Figure 1. Comparative bursa sizes scored with HIPRA bursameter.

EFFICACY

No IBDV circulation was detected on either of the houses, so the productive parameters were in line with what was expected (Table 1).

	Slaughter age (days)	B.W at slaughter (kg)	% Mortality	ADG (g)	FCR
GUMBOHATCH®	49	3.241	6.46*	66.14	1.81
Standard ICX	48	3.154	2.82	65.71	1.86

*Animals in this group suffered an incubation problem that was solved during the first week of life.

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

PCR results from bursal imprints (Table 2) evidenced replication of the vaccine virus from day 28 in the GUMBOHATCH® group and day 31 in the standard-formulated immune complex vaccine group. At 35 days of age, 93% of the animals vaccinated with GUMBOHATCH® were positive with an average titre of 4,655 (Table 3) and a CV of 45%. At 31 days, 73% of the animals vaccinated with the standard immune complex vaccine were still negative with an average titre of 467 and a CV of 208%. Although no titres were collected for 1 day-old chicks, higher maternally derived antibodies should have been expected in the GUMBOHATCH® group which came from younger breeders.

	Serology (CIVTEST)					PCR (GUMBOCHECK)			
	0	25	28	31	35	25	28	31	35
GUMBOHATCH®	breeders 25w		82		4655		HIPRA 1052		HIPRA 1052
Standard ICX	breeders 33w	152		467		ND		2512	

Table 2. Comparative serology and PCR results for GUMBOHATCH® vs standard-formulated immune complex vaccine at different days of age.
N.D.: Non-detected.

CONCLUSIONS

The results obtained in this study allow the conclusion to be drawn that vaccination with GUMBOHATCH® is safe and confers a faster humoral protection against IBD when administered via the in ovo route under field conditions. The more rapid humoral response observed with GUMBOHATCH® compared to a standar-formulated immune complex vaccine, may correspond to the new formulation and controls performed that prevent the neutralisation of the vaccine virus when in contact with high levels of maternal antibodies.