

Comparison Between Commercial Broilers Vaccinated with Two Immune Complex IBD and a Live M.B Vaccine



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Introduction

Live attenuated IBD vaccines are applied on the farm when the maternal-derived antibody (MDA) titers are below the breakthrough titers of the vaccine. The IBD immune complex vaccine is injected in the hatchery in the presence of MDAs. Here we present two field trials in which we compared the MB live vaccine to two immune complex vaccines based on the W2512 strain in commercial broilers in Vietnam.

Materials & Methods

Trial number one was conducted on three farms with 230,000 Ross 308 commercial broiler chickens in a total of 13 environmentally controlled houses. Day old chickens were injected in the hatchery with A-BD and B-TR IBD immune complex vaccines on farm 1 and farm 2 respectively and a live IBD vaccine, M.B strain, was applied to chickens in farm 3 by drinking water at 16 days of age. Trial number two was conducted in a farm with 12 houses holding 240,000 Ross 308 broilers chickens. Group C chickens, houses 1 to 6, were vaccinated with a live M.B vaccine, applied

by drinking water at 12 days of age, and Group D chickens, houses 7 to 12, were vaccinated with an immune complex vaccine B-TR by subcutaneous injection in the hatchery. The rest of the vaccination program was according to Table 1.

At 12, 28 & 35 days of age, we took blood samples for IBD ELISA titers (IDEXX) in both trials, IB ELISA and BBW only in trial 1 and the bird's performance parameters were analysed at 33d (Trial 1) and 35d (Trial 2).

Table 1. Vaccination program

Day old	Commercial trial one		
	Vu Thi Huong 1 (F1) (A-BD Vac.)	Le Van Quyet (F2) (B-TR Vac.)	Vu Thi Huong 2 (F3) (M.B Vac.)
DOC	ND-IB Massachusetts, IB variant (793B)	ND-IB Massachusetts, IB variant (793B)	ND-IB Massachusetts, IB variant (793B)
	ND killed	ND killed	ND killed
	Vaccine A-BD	Vaccine B-TR	
16D			Vaccine M.B strain
18D	ND-IB Massachusetts	ND-IB Massachusetts	ND-IB Massachusetts

Day old	Commercial trial two (Phu An 2 Farm)		
	Group C (M.B Vac.)	Group D (B-TR Vac.)	Route
DOC	ND-IB Massachusetts, IB variant (793B)	ND-IB Massachusetts, IB variant (793B)	Spay
	ND killed	ND killed	SC
		Vaccine B-TR	SC
12D	Vaccine M.B strain		WD
14D	ND-IB Massachusetts	ND-IB Massachusetts	WD

Results and Discussions

Trial one: IBD antibody titer response

Chart 1. IBD titers Trial 1

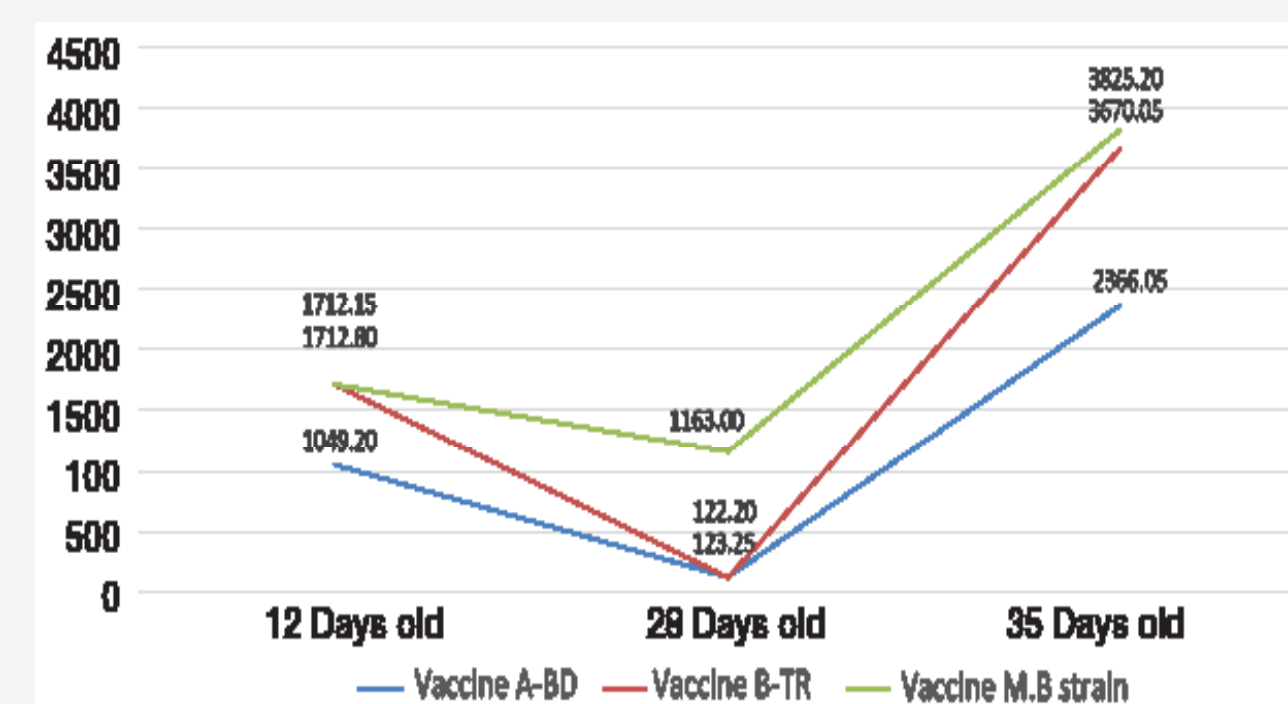
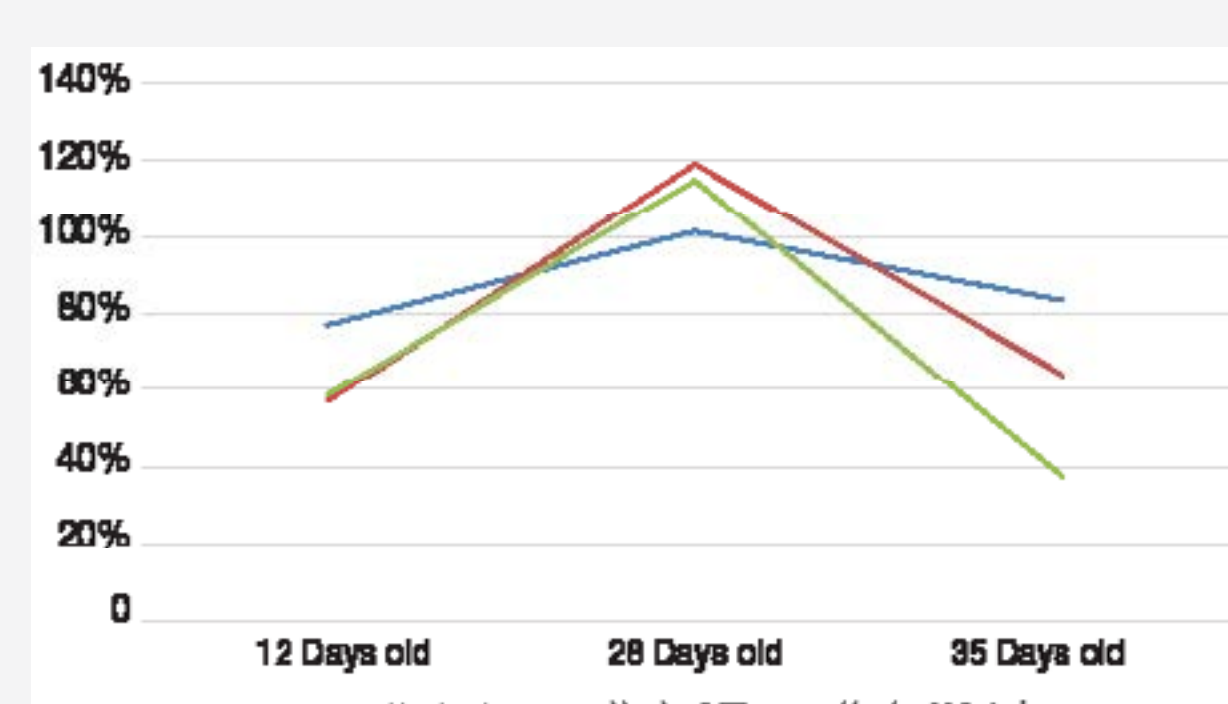


Chart 2. CV of IBD titers



In trial one, the average IBD antibody titer at 12 days of age was 1,049.2 in birds vaccinated with A-BD vaccine, 1,712.8 in birds vaccinated with B-TR vaccine and 1,712.1 in the MB group. At 28 days of age, birds vaccinated with the immune complex vaccines were negative by ELISA and the MB group was 1,163. At 35 days of age, MB vaccinated chickens had high and uniform IBD antibody titers of 3,825.2, CV=37.5%, while chickens vaccinated with the immune complex vaccines on farms 1 and 2 had poor uniformity, and lower antibody titers of 2,366.0, CV=83.4% and 3,670.0, CV=64.1% respectively. Looking at IBD titers at 35 days we can see a clear difference between the 3 groups. The MB vaccine had minimum samples under the baseline 1000 of Elisa Idexx kit, although other groups (vaccine A-BD, vaccine B-TR) have AVG titers higher than 1000. Details show 20-35% were under the protected line.

In trial two, group C (M.B live vaccine) showed significant higher titers (2,670.9) than group D (B-TR vaccine), (132.45) at 35 days of age.

Trial Two: IBD antibody titer response

Chart 4. IBD titers Trial 2

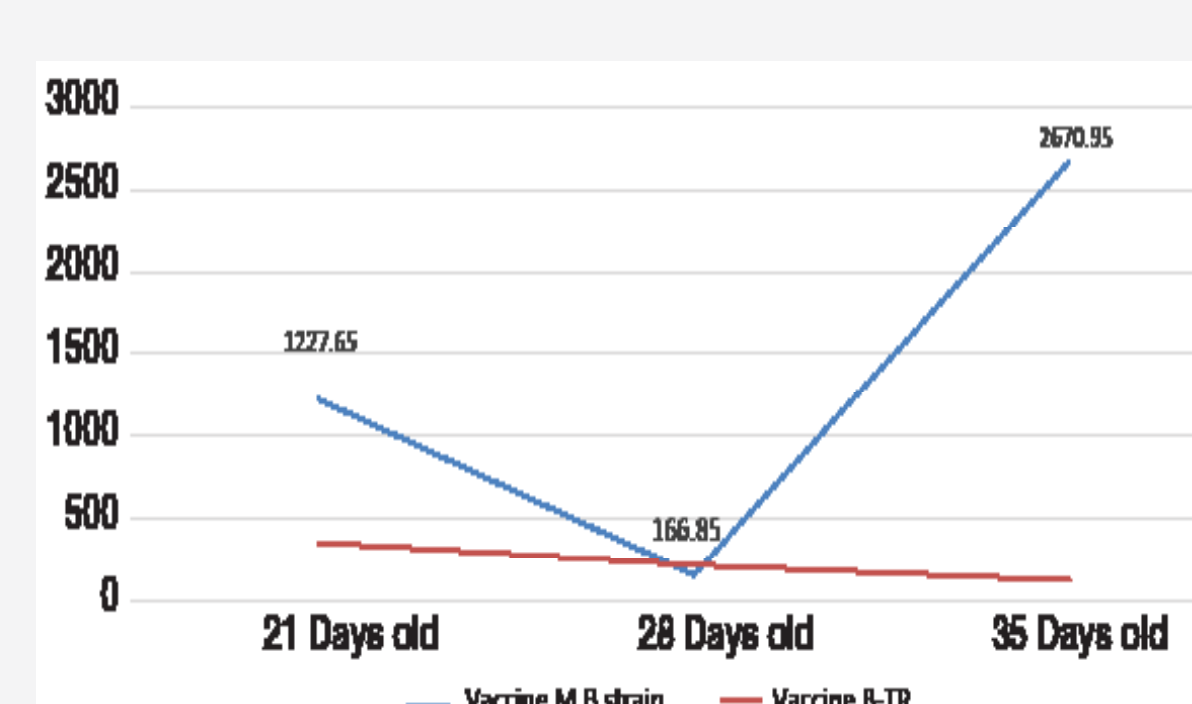
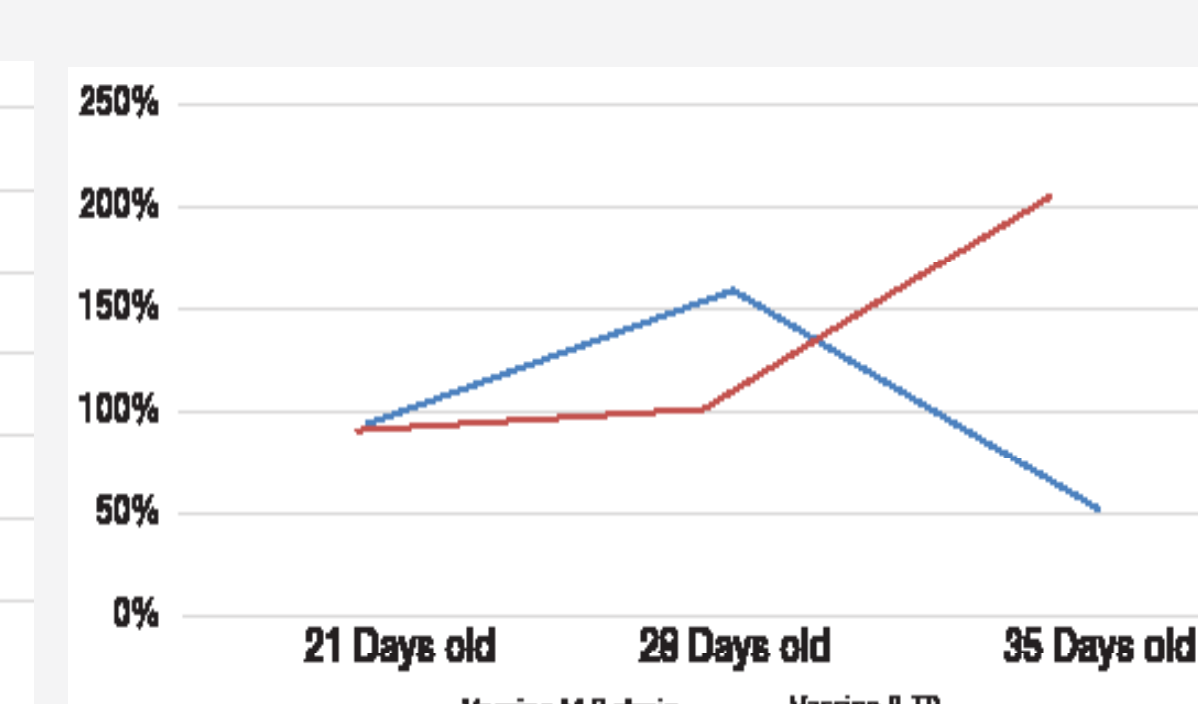


Chart 5. CV of IBD titers



Productivity

Table 2. Performance trial 1

	BW (kg)	Mortality (%)	FCR	Average age (day)	EPEF index
Vaccine A-BD	2.08	2.62	1.47	33	427.4
Vaccine B-TR	2.03	2.65	1.53	33	402.0
Vaccine M.B strain	2.16	2.23	1.52	33	430.6

Table 3: Performance trial 2

	BW (kg)	Mortality (%)	FCR	Average age (day)	EPEF index
Vaccine M.B strain	2.34	3.19	1.40	35.4	455.9
Vaccine B-TR	2.23	2.48	1.42	35.2	436.8

Conclusions

Trials one and two showed that chickens vaccinated with the M.B strain had earlier onset of IBD antibodies, and higher and more uniform titers compared to immune complex vaccines. The serology and performance indicates that the MB live vaccine applied on the farm is both safer and more efficacious than two immunocomplex vaccines containing the W2512 strain.