



## **Enhancement of immune response against IBD and IB in antibiotic treated *Mycoplasma gallisepticum* serologically positive broiler chickens**

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**Abstract :** This study was carried out to study effect of antibiotics and or probiotics on immune response of *Mycoplasma gallisepticum* (MG) serologically positive broiler chickens to IBD and IB live vaccine. A total number of 210, 1 day old broiler chickens were used. Chicks were divided into seven equal groups and treated as follows: betaine, macroloids (tylosin), polymyxins (colistin), tylosin and betaine, colistin and betaine was given to group 1, 2, 3, 4 and 5; respectively. While group 6 and 7 was kept nontreated vaccinated and non vaccinated non treated (negative) control ; respectively. Chickens groups 1-6 were vaccinated with vector IBD and IB commercial vaccines simulating commercial field. Evaluating antibody titers against used vaccines was done using ELISA kits on sera collected at 0 day of life and every 10 days till the end of the experiments. Results revealed that the best means ELISA titer results against IBD vaccine by the end of the experiments was 7950 in both colistin group (3) and colistin and betaine group (5), followed by group (4) received tylosin and betaine which was 7800, followed by group (2) received tylosin which was 7750 followed by group (1) received betaine only which was 7700, followed by 7400 in group 6 (vaccinated non treated). The mean ELISA titers against IB live vaccine the highest was in group (5) received colistin and betain which was 1540, followed by group (3) received colistin only which was 1490, followed by group (4) received tylosin and betaine which was 1345, followed by group (1) received betaine only which was 1395, followed by group (2) which received tylosin which was 1300, while non treated vaccinated group 6 gives 1212. The recorded mean ELISA titers of MG, IBD and IB in sera of chicks at 1 day of life 5269, 11000 and 5790; respectively are due to maternal derived antibodies. Maternal derived antibodies to IBD and IB was gradually decreased in non vaccinated non treated group 7 to reach 2800 and 111 at the 30th day of life. While MG antibodies was markedly increased after live vaccine application, on the other hand non observed lesions was detected in antibiotic medicated group.

It could be concluded that both polymyxins (colistin) and macroloids (tylosin) antibiotics used in this study has positive impacts in controlling of *Mycoplasma galisepticum* and on immune response of broiler chickens to IB and IBD vaccines. Prebiotic (betaine) enhanced positively immune system to produce humoral immune response. A combination between antibiotic and prebiotic can be used to minimize the possible adverse effects of excessive use of antibiotic on vital organs.

**Keywords :** Broiler, IB and IBD vaccines, Elisa test, colistin, tylosin, Betaine.