

## Effect of Fatty Acids in Feed on Levels of Antibody Titers and CD4 and CD8 T-Lymphocyte against Newcastle Disease Virus of Vaccinated Broiler Chicken

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**Abstract :** 400 one-day-old male broiler chicks (Ross-308) randomly divided to 2 main groups, 1st main group (GA) was feeding basal diet with medium chain fatty acid (MCFA) at rate of 0.15% and divided to four subgroups, 3 subgroups vaccinated with different routes with Newcastle Disease Virus (NDV) and non-vaccinated group. The 2nd main group (GB) feeding basal diet without MCFA and divided the same as 1st main group. The parameters used in this study included: ND antibody titers at 1, 10, 21, 28, 35 and 42 days of age and values of CD4 and CD8 at 1, 20, 30 and 42 days of age. This experiment detected increase in ND antibodies titers in (G1, G2, G3) groups were fed on basal diet MCFA comparing to groups were fed without adding MCFA (G5, G6, G7) and control groups (G4, G8). The results of cellular immune response (CD4 and CD8) T-cells in broiler chicks indicated that there was obviously significant relationship between dietary Fatty Acid (FA) versus the diet without FA on the level of CD4 parameter, for the entire experimental period. The effect of different ages was statistically significant in creating different values of CD4 level, whereas the CD4 level decreases markedly with age. However, analyzing the data of different vaccination methods, oculonasal method of vaccination led to the highest value of CD4 compared with the oral, S/C and control groups. There were statistical differences in CD8 values due to supplementation of FA versus the basal diet and due to the effect of different age periods. As for the age effect, the CD8 value at 20 days of age was significantly higher than at 42 and 30 days.

**Keywords :** broiler, CD4 and CD8, fatty acids, Newcastle Disease

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