

Abstract:

Immune responses are critical for protection of chickens from infectious bursal disease (IBD). In this study, the antibody response-enhancing effect of drinking water supplementation of 1% stinging nettle and neem on different IBD vaccines and vaccination regimes was evaluated, using 36 (n = 36) specific antibody negative indigenous chicks. The birds were allocated into 3 groups as follows: 1A-C, 2A-C, and 3A-B, while group 3C acted as the unvaccinated non-supplemented control. A local inactivated K1 and imported live attenuated D78 IBD vaccines were given to groups 1A-C and 3A-B at 14 and 28 days of age, respectively. A combination of K1 and D78 vaccines was given 30 days apart to groups 2A and 2B (D78 at 14 and 21 days and K1 at 44 days of age) and on the same day to group 2C at 14 and 28 days of age. Stinging nettle was given in water to groups 1B, 2B, and 2C, and neem to groups 1C, 2A, and 3B. Birds were bled weekly and immune responses monitored using indirect ELISA. Both neem and stinging nettle had antibody response-enhancing effects in groups 1B and 1C, receiving the local inactivated K1 vaccine. There were significant differences ($P < 0.05$) in antibody titers between groups 1A and 2C. Stinging nettle induced earlier onset of high antibody responses in group 2C and persistent titers ($>3.8 \log_{10}$) from the third week in group 2B. Imported live D78 vaccine induced higher antibody titers compared to the local inactivated K1 vaccine. Groups 2B and 2C receiving a combination of the local K1 and imported live attenuated D78 vaccines had the highest antibody titers. Adoption of stinging nettle supplementation and a prime-boost program involving use of a local virus isolates-derived vaccine is recommended.