ABSTRACT

Title : Assessment of immune response against Newcastle disease oral pellet vaccine in Desi chicken and Turkey

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A study was undertaken to assess the immune response in desi chicken and turkey against Newcastle disease oral pellet vaccine and also to assess the egg production performances and egg quality characters in desi chicken.

In desi chicken experimental trial, 48 chicks were divided into six groups having eight chicks in each group. First group (T1) served as unvaccinated control, second group (T2) was primed with commercially available Thermostabilised D58 vaccine followed by booster with TANUVAS oral pellet vaccine, Third group (T3) was primed as well as boosted with TANUVAS oral pellet vaccine, Fourth group (T4) was primed with RDV’F’ followed by booster with commercial vaccines (LaSota and R₂B), Fifth group (T5) was primed with commercially available Thermostabilised D58 vaccine followed by booster with commercial vaccines (LaSota
and R2B), Sixth group (T6) was primed with TANUVAS oral pellet vaccine followed by booster with commercial vaccines (LaSota and R2B).

Serum samples were collected at 21 days interval and the post vaccination antibody titre was assessed by HI and ELISA tests. No significant differences were noticed between T2, T3, T5 and T6 groups at 4th week of age. Between T2 and T3 groups no significant differences (P<0.01) were noticed from 4th week to 52 weeks of age that is throughout the study period. On 4th week of age significant differences were noticed between T4 and other (T2, T3, T5, T6) groups. From 7th week onwards no significant differences (P>0.01) were noticed between T4, T5 and T6 groups up to 52nd week of age. But significant differences (P<0.01) were noticed between T2 and T4, T5, T6 groups and between T3 and T4, T5, T6 groups.

Higher titre was observed in T4 group than T2, T3, T5 and T6 groups. But the chicks in all the vaccinated groups in this study showed protective level of antibody titre was observed throughout the study period of 52 weeks.

In turkey experimental trial, 32 turkey poults were divided into four groups having eight poults in each group. First group (T1) served as unvaccinated control, second group (T2) was primed with commercially available Thermostabilised D58 vaccine followed by booster with TANUVAS oral pellet vaccine, Third group (T3) was primed as well as boosted with TANUVAS oral pellet vaccine, Fourth group (T4) was primed with RDV‘F’ followed by booster with commercial vaccines (LaSota and R2B).

Serum samples were collected at 21 days interval and the post vaccination antibody titre was assessed by HI and ELISA tests. Between T2 and T3 groups no significant differences (P>0.01) were noticed from 4th week of age to 24th week of age. Higher titre was observed in T4
group than T2 and T3 groups and significant differences were \( (P<0.01) \) noticed. But all the vaccinated groups in this study showed protective level of antibody titre was observed throughout the study period of 24 weeks.

The challenged birds were observed for ten days for the development of clinical symptoms, lesions and mortality. No mortality was observed in any of the vaccinated group whereas 100 percent mortality was recorded during the observation period in the unvaccinated control groups in both desi chicken and turkey.

The vaccination schedule followed in group T3 that was primed with TANUVAS oral pellet vaccine on 7th day followed by booster with TANUVAS oral pellet vaccine on 28th day, 8th week, 16th week and every three months until 52 weeks evoked protective level antibody titre throughout the study period that is upto 52 weeks of age, withstood challenge and provided 100 per cent protection.

In all the six treatment groups in desi chicken, no statistically significant differences were noticed in egg production performance from 25 to 52 weeks of age \( (P\geq0.05) \) and egg quality parameters from 28 to 52 weeks of age \( (P\geq0.05) \).