

## **Abstract**

The aim of this study was to determine the effect of parasitism on village chickens' immune response to Newcastle disease (ND) vaccination. Seventy two chickens, from a population that was confirmed to be infected with ecto- and endo-parasites, from Mbeere District, were bought and divided into 8 groups which were variously treated for parasites: Groups 1 and 8 were controls, while Groups 2 and 5, 3 and 6, 4 and 7 were duplicate treated for endo-parasites only, ecto-parasites only and for both endo- and ecto-parasites, respectively. Groups, 5, 6 and 7 were also vaccinated with ND vaccine; the duplicate unvaccinated groups served as respective controls. Since these birds were also found to carry coccidian, all groups except Group 8 were also treated for coccidiosis; this was to give all the treated groups a baseline start, free of coccidia. After respective vaccination, all the birds were monitored serologically for six weeks; their antibody titres were determined on weekly basis, using hemagglutination inhibition (HI) test. Upon vaccination, groups 5, 6 and 7 showed a significant rise ( $P < 0.05$ ) in Newcastle disease antibody titer from the start to the end of the experiment compared to the baseline one in the non vaccinated groups 2, 3 and 4. For the vaccinated group, after the 3<sup>rd</sup> week post vaccination up to the end of the experiment, group 7 had a significantly higher antibody titer ( $P < 0.05$ ) than the other 2 vaccinated groups 5 and 6. Titres for Groups 1 and 8 continuously dropped over the experimental period. The study has, thus, shown that parasite control resulted in improved immune response to ND by the experimental birds; total parasite treatment giving better results than partial treatments (for ecto- or endo-parasites only). Farmers should, therefore, be advised to practice total parasite control before vaccination