

## ABSTRACT

Oil-based inactivated Newcastle disease vaccine was prepared and its efficacy against the prevailing velogenic ND virus, isolated and biologically characterized from field outbreaks, was determined. The mesogenic type of ND virus (Mukteswar strain) preserved in poultry vaccine production unit of Veterinary Research Institute, Lahore was used for the preparation of the Oil-based vaccine. Oil-based vaccine was prepared by mixing two parts of the inactivated antigen with three parts of the montanide oil. The vaccine was evaluated for its safety and immune response in broilers. One hundred and twenty five day old birds were divided in 5 groups designated as A to E. The birds of group A were given oil-based and ND-live (Mukteswar) at day zero of age. Group B was vaccinated with oil-based and ND live vaccine simultaneously at day 7<sup>th</sup> of age. Group C was treated with oil-base at day zero and ND-live at day 7<sup>th</sup> of age. Group D was given oil-based vaccine at day 7<sup>th</sup> of age. While the birds of group E served as unvaccinated control. The anti-NDV- HI- antibody response of all the four groups was determined on day 14, 21, 28, 35 and 42 post-vaccination. On 28<sup>th</sup> day of age, the birds were challenged with velogenic field isolated virus. The birds that survived from challenge were also bled at day 42 of age to determine anti-NDV-antibody titers. High antibody titers and 100% protection was observed in birds of group B which suggested that vaccination at day 7<sup>th</sup> of age is helpful in the prevention against disease challenge. In A, C and D groups 90 % protection was seen. Oil-base ND vaccine containing Mukteswar strain gave remarkable antibody titers to resist the field virus. So it was concluded that oil based vaccine can give better immune response and protection against disease when used in-early age in broiler chicks.