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MODERN TECHNIQUES APPLIED FOR HI AND ELISA TO DETECT THE VACCINE TITER USED AGAINST NEWCASTLE DISEASE

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ABSTRACT

The rising incidence of Newcastle disease (ND) will present considerable problems to the poultry industry, requiring efficient assessment of vaccine efficacy via contemporary methods such as Hemagglutination Inhibition (HI) and Enzyme-Linked Immunosorbent Assay (ELISA). This chapter will examine the utilization of serological approaches to ascertain vaccine titers against Newcastle Disease, highlighting their prospective contribution to improving biosecurity protocols and vaccination tactics. The review will consolidate expected outcomes from current studies, concentrating on the efficacy of diverse vaccination procedures and the impact of variables such as housing systems and genetic strains on immune responses. HI is anticipated to remain a conventional technique for evaluating antibody titers, whereas ELISA will provide enhanced sensitivity and specificity, facilitating a more thorough comprehension of vaccine-induced immunity. This chapter will identify deficiencies in the existing body of information, specifically the need to develop genotype-matched vaccinations to combat new virus strains. These gaps will highlight the necessity for continued research to enhance immunization strategies. Recommendations will incorporate sophisticated diagnostic methodologies to enhance vaccination efficacy and alleviate the economic repercussions of Newcastle Disease outbreaks in chicken agriculture. This chapter will address these problems to inform future strategies for ND management, emphasizing the significance of integrating conventional and contemporary serological techniques. The expected results will enhance vaccination protocols, refine biosecurity measures, and fortify defense against poultry sector ND.

Keywords: Newcastle disease, vaccine titer, Hemagglutination Inhibition, ELISA, poultry industry, biosecurity, serological methods.