BIOLOGICAL CHARACTERISTICS OF NEWCASTLE DISEASE VIRUS ISOLATED FROM NATIVE CHICKEN IN SURABAYA

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ABSTRACT

Newcastle Disease (ND) caused by avian paramyxovirus serotype 1 (APMV-1) have been a major viral disease in poultry industry because of it's high morbidity and mortality rate and also notable for causing huge economic loss. Newcastle Disease commonly grouped into lentogenic, mesogenic, and velogenic pathotype. Several methods can be used to determine the pathogenicity of ND isolates. Homology and phylogenetic assessment are the currently most used method for pathogenicity determination, and biological characterization as cross reference study. Biological characterization include the determination of Mean Death Time (MDT), Intracerebral Pathogenicity Index (ICPI), and Intravenous Pathogenicity Index (IVPI). MDT, ICPI, and IVPI for pathogenicity assessment cannot be neglected along with molecular method (WHO, 2002). Sample of native chicken from Surabaya was taken and identified for NDV by Hemagglutination (HA) and Hemagglutination Inhibition (HI) method. Sample that show positive result for HA and HI test were taken, and three isolate labeled as ND/A1/2019, ND/A2/2019, and ND/A3/2019 tested for pathogenicity by biological characterization. MDT assay uses injection of diluted fresh alantoic fluid into 9-10 day old SAN embryonated chicken egg, day old chicken (DOC) hatched from SAN flock for ICPI, and 6 weeks old SAN chicken for IVPI. The final score of MDT, ICPI, and IVPI correspondingly show that all the three isolate belong to the velogenic group of NDV.

Keywords: ND, Mean Death Time (MDT), Intracerebral Pathogenicity Index (ICPI), Intravenous Pathogenicity Index (IVPI).

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