

ABSTRAK

KAJIAN LABORATORIK Uji HEMAGLUTINASI DAN HEMAGLUTINASI INHIBISI TERHADAP VIRUS *NEWCASTLE DISEASE* DAN GAMBARAN PATOLOGIS AYAM LAYER DENGAN GEJALA TORTIKOLIS

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Tortikolis merupakan salah satu gejala klinis yang diakibatkan oleh penyakit *Newcastle Disease* yang menyerang unggas. Gejala ini dapat diakibatkan oleh beberapa faktor agen penyebab sehingga perlu dilakukan pembuktian secara laboratoris, baik untuk deteksi antigen maupun antibodi. Ayam layer yang terinfeksi virus ND dapat menimbulkan kerugian ekonomi yaitu berupa penurunan produksi telur. Penelitian ini bertujuan untuk deteksi virus *Newcastle Disease* dengan melakukan uji hemaglutinasi (HA), hemaglutinasi inhibisi (HI) dan mengetahui gambaran lesi patologis pada ayam yang menunjukkan gejala tortikolis. Bahan yang digunakan yaitu dua ekor ayam sakit yang menunjukkan gejala tortikolis dengan kode Ayam A1 dan Ayam A2. Sampel serum diambil dari kedua ayam tersebut, selanjutnya diterminasi dengan cara emboli vena brachialis. Serum darah diperiksa titer antibodi menggunakan antigen positif NDV. Sampel otak dan lien terduga ND diinokulasikan pada telur ayam berembrio (TAB) umur 10 hari dengan negatif antibodi ND. Cairan alantois yang didapatkan dilakukan uji uji hemaglutinasi (HA) dan hemanglutinasi inhibis (HI) menggunakan serum anti ND dari koleksi laboratorium mikrobiologi FKH UGM. Lesi organ diamati secara makroskopis dan secara mikroskopis menggunakan pengecatan Hematoksilin dan Eosin. Hasil dari uji hemaglutinasi titer antibodi ayam A1 dan ayam A2 menunjukan hasil yang sama yaitu 512 HIU, sedangkan identifikasi cairan alantois hasil kultur TAB menunjukkan hasil uji HA negatif. Gambaran lesi makroskopis terjadi perubahan hemoragi di otak dan proventikulus, namun organ lain tidak teramati perubahan. Hasil mikroskopis teramati pada organ pada organ jantung, pulmo, hepar, proventikulus, intestinum berupa infiltrasi limfosit dan nekrosis yang lebih mendominasi. Data patologi mikroskopis yang diperoleh dari penelitian ini dapat disimpulkan bahwa isolat Ayam A1 dan A2 menunjukkan infeksi virus ND.

Kata kunci: Lesi Patologi, Makroskopis, mikroskopis, *Newcastle disease*, Ayam, Layer, Tortikolis

ABSTRACT

LABORATORY STUDY OF HEMAGGLUTINATION ASSAY AND HEMAGGLUTINATION INHIBITION TESTS ON VIRUSES NEWCASTLE DISEASE AND PATHOLOGICAL OF LAYER CHICKEN WITH TORTICOLIS SYMPTOMS

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Torticollis is one of the clinical symptoms caused by Newcastle Disease that affect poultry. This symptoms can be caused by several causal factors, so it is necessary to carry out laboratory verification, both for antigen and antibody detection. Layer chickens infected with the ND virus can cause economic losses in the form of decreased egg production. This study aims to detect the Newcastle Disease virus by carrying out hemagglutination (HA) tests, hemagglutination inhibition (HI) and knowing the description of pathological lesions in chickens showing symptoms of torticollis. The materials used were two sick chickens showing symptoms of torticollis with the code Chicken A1 and Chicken A2. Serum samples were taken from both chickens, then terminated by means of brachial vein embolism. Blood serum was checked for antibody titer using positive NDV antigen. Brain and spleen samples suspected of ND were inoculated on 10 days old embryonated chicken eggs (TAB) with negative ND antibodies. The allantoic fluid obtained was subjected to hemagglutination (HA) and hemanglutination inhibition (HI) tests using anti-ND serum from the microbiology laboratory collection of the Faculty of Veterinary Medicine UGM. Organ lesions were observed macroscopically and microscopically using Hematoxylin and Eosin staining. The study showed of the hemagglutination test antibody titers of chicken A1 and chicken A2 showed the same result, titer 512 HIU, while the identification of allantoic fluid from TAB culture showed negative HA test results. The macroscopic picture of the lesion was hemorrhagic changes in the brain and proventriculus, but no changes were observed in other organs. Microscopic results were observed in organs in the heart, pulmo, liver, proventriculus, intestine in the form of lymphocyte infiltration and necrosis which predominate. The microscopic pathology data obtained from this study can be concluded that chicken isolates A1 and A2 showed ND virus infection

Keywords: *Pathological lesions, macroscopic, microscopic, Newcastle Disease, chicken, Layer, Torticollis*