

PENDEKATAN IMUNOPATOLOGIS IMUNOHISTOKIMIA TERHADAP INFEKSI ALAMI AVIAN INFLUENZA VIRUS PADA AYAM PEDAGING YANG DISUPLEMENTASI WATER ADDITIVE

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ABSTRAK

Infeksi *avian influenza virus* (AIV) pada ayam pedaging menyebabkan kerugian ekonomi yang besar sehingga dibutuhkan solusi untuk menanggulangi hal tersebut yaitu melalui vaksinasi. Meskipun demikian, masih saja terjadi infeksi subklinis pada unggas *day old chick* (DOC). Dibutuhkan alternatif lain untuk mencegah infeksi AIV dan salah satunya dengan *water additive*. Tujuan penelitian ini adalah mempelajari pengaruh *water additive* komersial (KimchiStoc[®]) pada ayam pedaging terhadap infeksi AIV pada ayam broiler di peternakan komersial secara imunopatologis imunohistokimia. Pada penelitian ini 55 ekor DOC ayam pedaging *strain Cobb* digunakan sebagai hewan coba selama 35 hari. Sebelum perlakuan (minggu ke-0), lima ekor DOC dipilih secara acak dan dinekropsi untuk diambil organ paru-paru. Diperiksa lesi patologis, anatomis, histopatologis, dan imunopatologis imunohistokimia *streptavidin biotin* (IHK SB). Lima puluh ekor DOC yang tersisa dibagi secara acak menjadi 2 grup perlakuan. Grup pertama (GI) kontrol tanpa suplementasi, sedangkan grup kedua (GII) adalah grup perlakuan suplementasi *water additive* kimchi 0,2% (dengan dosis 2 ml/1000ml, selama 5 hari/minggu). Pengamatan dilakukan selama 5 minggu, setiap minggunya sebanyak lima ekor ayam dipilih secara acak pada masing-masing grup untuk diambil organ paru-paru. Deteksi virus AI dilakukan dengan IHK SB pada organ paru-paru (DOC, GI dan GII). Hasil penelitian menunjukkan, bahwa pada pemeriksaan IHK SB, deposit antigen nukleoprotein AIV yang berwarna kecoklatan terlihat ada pada jaringan parenkima paru-paru ayam GI, tetapi sudah tidak terlihat lagi pada ayam GII pada minggu ketiga. Uji IHK SB dapat diaplikasikan untuk mendeteksi ayam pedaging terinfeksi AIV secara subklinis. Berdasarkan penelitian ini dapat disimpulkan bahwa *water additive* yang tersedia secara komersial (KimchiStoc[®]) dapat mencegah infeksi alami AIV pada minggu ketiga setelah pemberian.

Kata kunci: ayam pedaging, *avian influenza virus*, IHK SB, *water additive*

**IMMUNOPATHOLOGICAL IMMUNOHISTOCHEMICAL APPROACH
OF NATURAL AVIAN INFLUENZA VIRUS INFECTIONS ON BROILER
SUPPLEMENTATION WITH WATER ADDITIVE**

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ABSTRACT

Avian influenza virus (AIV) infection in chickens causes huge economic losses so that a solution is needed to namely through vaccination overcome outbreak. However, administration of AIV vaccines can possibly initiate AIV subclinical infections in chickens. Therefore, another alternative approach is needed to prevent AIV infection, one of them is water additive commercial (KimchiStoc[®]). The purpose of the present study was to study effect of water additive commercial (KimchiStoc[®]) against natural AIV infection in broiler chickens on a commercial farm. In the present study, 55 DOC broiler chickens were used as experimental animals for 35 days. Before supplementation (Week-0), five DOCs were randomly selected, necropsied and the lungs were collected. Fifty remaining DOCs were divided randomly into 2 groups of 25 each. The first group was chickens without supplementation of water additive commercial (GI), while the second group was chickens supplemented with water additive commercial 0.2% with a dose 2 ml/1000ml, of 5 days/week (GII). Observations were carried out for 5 weeks. Each week five chickens in each group were randomly necropsied. Lungs were collected and detected for VAI by using immunopathological immunohistochemical streptavidin biotin (IHC SB). The results showed that antigens nucleoprotein deposits were observed in membrane of parenchymal tissue of the lungs in all chickens in Group I, but it was no longer seen in chickens Group II in the third week. IHC SB test can be applied to detect AIV infected broilers subclinically. The water additive commercial can prevent the natural infection of AIV in at least the third week after KimchiStoc[®] administration.

Keywords: avian influenza virus, broiler chickens, IHC SB, water additive