

ABSTRAK

PENGARUH PEMBERIAN IMBUHAN PAKAN KOMBINASI HERBAL, PROBIOTIK, DAN PROPOLIS TERHADAP TITER ANTIBODI *NEWCASTLE DISEASE* (ND) PADA AYAM *LAYER* PRODUKSI

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Larangan penggunaan *Antibiotic Growth Promotor* (AGP) pada pakan unggas mendorong pemanfaatan alternatif seperti probiotik, ekstrak herbal, atau kombinasi keduanya sebagai pengganti AGP. Imbuhan pakan kombinasi herbal dan probiotik telah terbukti dapat meningkatkan titer antibodi terhadap *Newcastle Disease* (ND) pada ayam *broiler*. Propolis dipercaya akan potensinya dalam meningkatkan efek imunomodulator. Tujuan dari penelitian ini adalah untuk mengetahui efek kombinasi imbuhan pakan herbal, probiotik, dan propolis terhadap titer antibodi ND pada ayam *layer* periode produksi. Sebanyak 40 ekor ayam *layer* strain ISA Brown umur 13 minggu dibagi ke dalam dua kelompok yaitu kelompok kontrol dan perlakuan. Riwayat vaksinasi ND dari *farm* sebelumnya yaitu sudah divaksin ND sebanyak 6 kali, dan vaksin terakhir umur 10 minggu. Pakan ayam saat umur 14 minggu mulai ditambah imbuhan pakan herbal yang mengandung jahe merah (*Zingiber officinale var. rubrum*), temulawak (*Curcuma zanthorrhiza*), dan probiotik yang mengandung *Bacillus subtilis*, *Lactobacillus acidophilus*, serta propolis untuk kelompok perlakuan dan hanya pakan tanpa imbuhan untuk kelompok kontrol. Ayam diambil darah untuk diukur titer antibodi ND pada umur 16 minggu. Kedua kelompok ayam divaksin ND-EDS-IB pada umur 17 minggu. Ayam berumur 19 dan 23 minggu diambil darah untuk diukur titer antibodi dengan metode hemaglutinasi inhibisi (HI). Analisis data menggunakan uji statistik *Mann-Whitney* dan *Independent T-Test*, sesuai dengan distribusi datanya. Hasil dari pengukuran rata-rata titer antibodi pada umur 16 minggu kelompok perlakuan memiliki rata-rata titer antibodi ND (7.5) dan kelompok kontrol (4.5). Pada 2 minggu sesudah divaksin, kelompok perlakuan memiliki rata-rata titer antibodi ND (10) dan kontrol (9.4). Pada 6 minggu setelah divaksin kelompok perlakuan memiliki rata-rata titer antibodi ND (10.6) dan kelompok kontrol (10.9). Kesimpulan dari penelitian ini adalah imbuhan pakan kombinasi herbal, probiotik, dan propolis berpengaruh terhadap titer antibodi ND pada ayam *layer* periode produksi meski tidak signifikan.

Kata kunci: *Ayam layer, Imbuhan pakan, Newcastle Disease, Titer antibodi*

ABSTRACT

EFFECTS OF FEED ADDITIVES WITH A COMBINATION OF HERBS, PROBIOTICS, AND PROPOLIS ON NEWCASTLE DISEASE (ND) ANTIBODY TITER IN PRODUCTION LAYERS

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The prohibition of Antibiotic Growth Promoters (AGPs) in poultry feed has encouraged the use of alternatives such as probiotics, herbal extracts, or a combination of both as AGP substitutes. Feed additives combining herbs and probiotics have been proven to increase antibody titers against Newcastle Disease (ND) in broiler chickens. Propolis is believed to have potential in enhancing immunomodulatory effects. The aim of this study was to determine the effect of a combination of herbal feed additives, probiotics, and propolis on ND antibody titers in laying hens during the production period. A total of 40 ISA Brown layer chickens aged 13 weeks were divided into two groups: control and treatment. The ND vaccination history from the previous farm indicated that the chickens had been vaccinated six times, with the last vaccination at 10 weeks of age. At 14 weeks of age, the feed for the treatment group was supplemented with herbal additives containing red ginger (*Zingiber officinale* var. *rubrum*), temulawak (*Curcuma zanthorrhiza*), probiotics containing *Bacillus subtilis*, *Lactobacillus acidophilus*, and propolis, while the control group received only feed without additives. Blood samples were collected at 16 weeks of age to measure ND antibody titers. Both groups were vaccinated with ND-EDS-IB at 17 weeks of age. Blood samples were taken again at 19 and 23 weeks of age to measure antibody titers using the hemagglutination inhibition (HI) method. Data analysis was performed using the Mann-Whitney and Independent T-Test, according to data distribution. The results showed that the average ND antibody titer at 16 weeks was 7.5 in the treatment group and 4.5 in the control group. Two weeks after vaccination, the treatment group had an average ND antibody titer of 10, and the control group had 9.4. Six weeks after vaccination, the treatment group had an average ND antibody titer of 10.6, and the control group had 10.9. The conclusion of this study is that the combination of herbal, probiotic, and propolis feed additives effects the ND antibody titer in laying hens but not significantly.

Keywords: *Antibody titer, Feed additives, Newcastle Disease, Layer chickens*