

INTISARI

KEMAMPUAN HEMAGLUTINASI (HA) *Avibacterium paragallinarum* SEROTIPE A DAN C TERHADAP BERBAGAI ERITROSIT UNGGAS KONSENTRASI 0,5 %

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Infectious coryza atau snot merupakan penyakit pada saluran pernafasan bagian atas unggas yang disebabkan *Avibacterium paragallinarum*. Gejala klinis snot antara lain pembengkakan pada daerah fasial yang disertai leleran dari sinus nasalis yang berbau busuk dan lakrimasi. Kejadian snot di lapangan telah banyak dilaporkan. Salah satu metode diagnosis snot adalah dengan melihat kemampuan bakteri menghemaglutinasi sel darah merah (eritrosit). Eritrosit yang digunakan pada uji hemaglutinasi (HA) baku adalah eritrosit yang difiksasi dengan *glutaraldehyde*. Proses pembuatan eritrosit yang difiksasi dengan *glutaraldehyde* ini rumit dan memiliki harga yang mahal, meskipun dapat digunakan dalam jangka waktu yang lama. Penelitian ini bertujuan untuk mengetahui kemampuan hemaglutinasi *Avibacterium paragallinarum* menggunakan eritrosit segar berbagai unggas (ayam pedaging, ayam petelur, ayam kampung, dan puyuh) dengan konsentrasi 0,5%.

Dua isolat referen *Avibacterium paragallinarum* serotipe A (tipe HA-1) dan serotipe C (tipe HA-4) digunakan dalam penelitian ini. Eritrosit ayam pedaging, ayam petelur, ayam kampung dan puyuh dikoleksi dan ditampung pada tabung konikal dengan penambahan antikoagulan *Ethylene Diamine Tetraacetic Acid* (EDTA). Eritrosit disentrifugasi dan diencerkan dengan *Phosphate Buffered Saline* (PBS) sehingga mendapatkan konsentrasi 0,5%. Isolat yang telah disonikasi kemudian dilakukan uji HA dengan eritrosit unggas yang telah dipersiapkan menggunakan *microplate*. Titer HA yang paling tinggi ditunjukkan pada uji Hemaglutinasi isolat *Avibacterium paragallinarum* serotipe A terhadap eritrosit segar puyuh konsentrasi 0,5 % dan isolat *Avibacterium paragallinarum* serotipe A dan C terhadap eritrosit yang difiksasi dengan *glutaraldehyde*.

Dari penelitian ini dapat disimpulkan bahwa *Avibacterium paragallinarum* serotipe A dan C dapat menghemaglutinasi eritrosit segar konsentrasi 0,5 % dari ayam pedaging, ayam petelur, ayam kampung, dan puyuh dengan titer yang bervariasi.

Kata kunci: *Infectious coryza*, *Avibacterium paragallinarum*, Hemaglutinasi, Eritrosit, Serotipe A dan C.

ABSTRACT

HEMAGGLUTINATION (HA) TEST OF *Avibacterium paragallinarum* SEROYPE A AND C WITH 0.5% OF VARIOUS POULTRY ERYTHROCYTES

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Infectious coryza, or snout, is an avian upper respiratory tract disease caused by *Avibacterium paragallinarum*. The clinical symptoms of snout are swelling in facial area with smelly fluid from nasal sinus, and lacrimation. Many cases of snout have been reported. One method of snout diagnosis is to see hemagglutinating ability of bacteria on red blood cells (erythrocytes). The erythrocytes used in the standard hemagglutination (HA) test are glutaraldehyde-fixed erythrocyte. The process of preparing glutaraldehyde-fixed erythrocyte is complicated and has a high price, although it can be used for long periods of time. The objective of this research is to study the hemagglutinating ability of reference isolates (serotype A and C) on fresh erythrocytes of various types of poultry (layer chicken, broiler chicken, *kampung* [village] chicken and quail) with concentration as high as 0.5%.

Two reference isolates of *Avibacterium paragallinarum*: serotype A (type HA-1) and serotype C (type HA-4) were used in this research after sonication. Erythrocytes of various types of poultry were collected from farm and stored in conical tube added with Etylene Diamine Tetra Acetic (EDTA). The erythrocytes were centrifuged and diluted with Phosphate Buffered Saline (PBS) until concentration of 0.5% was obtained. Sonicated isolates were then used to perform HA test with various types of erythrocytes in microplates. The highest HA titers were shown in the Hemagglutination test of *Avibacterium paragallinarum* serotype A isolate used quail's fresh erythrocytes at 0.5% concentration and *Avibacterium paragallinarum* serotype A and C isolates used glutaraldehyde-fixed erythrocyte.

The results showed that HA test on *Avibacterium paragallinarum* serotype A and C is able to be done using 0.5% fresh erythrocytes from broiler chicken, layer chicken, *kampung* chicken and quail respectively. The HA titers obtained from HA test using assorted bird's erythrocytes vary.

Keywords: Infectious coryza, *Avibacterium paragallinarum*, Hemagglutination, Erythrocytes, Serotype A and C.