

ABSTRAK

ISOLASI DAN IDENTIFIKASI BAKTERI *Escherichia coli* DAN GAMBARAN LESI MIKROSKOPIK MIKOTOKSIKOSIS BERBAGAI ORGAN PADA AYAM LAYER DI PETERNAKAN MITRA PT. STARFEED, JAWA TIMUR

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Konsumsi telur di Indonesia masih rendah, sehingga diperlukan peningkatan populasi ayam layer. Peningkatan populasi tersebut dapat meningkatkan risiko penyebaran penyakit. Penyakit tersebut dapat berupa toksikosis T-2 yang dapat diperparah oleh komplikasi, di antaranya kolibasilosis yang dapat menurunkan produktivitas ayam. Penelitian ini bertujuan untuk mengisolasi dan mengidentifikasi penyebab penyakit pada kasus ayam layer dengan gejala kolibasilosis dan toksikosis T-2. Metode penelitian ini adalah dengan nekropsis sampel ayam setelah euthanasia menggunakan emboli vena brachialis, sampel organ hepar, timus, tiroid, ginjal, *intestinum tenue*, dan lesi oral dari 3 sampel ayam dikoleksi untuk pembuatan preparat histopatologi dengan pengecatan hematoksilin eosin (HE). Isolasi bakteri dilakukan pada media *eosin-methylene blue agar* (EMBA) dengan sampel trakea, hepar, mesenterium, dan kuning telur dari salah satu ayam, diikuti pengecatan Gram, uji biokimia, serta uji patogenisitas menggunakan agar *Congo red* (CR) dan *embryo lethality assay* (ELA). Agar CR diinkubasi pada 37°C selama 24 jam dan 48 jam pada suhu ruang, sedangkan uji ELA menggunakan telur ayam berembrio 8 hari yang diinokulasi 0,2 ml suspensi *E. coli* (120 CFU) ke dalam ruang allantois, lalu diinkubasi 6 hari. Hasil histopatologi menunjukkan nekrosis submukosa oral, atrofi timus, proliferasi duktus biliverus hepar, dan erosi vili *intestinum*. Isolasi menunjukkan koloni *E. coli* berwarna *green metallic sheen*, Gram negatif, kokobasil, dan hasil uji biokimia mendukung konsisten dan indikatif *E. coli*: kuning pada *slant-butt* pada uji TSIA, indol positif, MR positif, VP negatif, sitrat negatif, positif motil, dan mampu memfermentasi glukosa, laktosa, sukrosa, mannitol, dan maltosa. Uji CR menunjukkan hasil negatif, sedangkan ELA menunjukkan kematian embrio 20%, mengindikasikan patogenisitas intermediet. Disimpulkan bahwa ayam mengalami infeksi *avian pathogenic E. coli* (APEC) dengan patogenisitas intermediet dan toksikosis T-2 secara bersamaan.

Kata Kunci: Kolibasilosis, mikotoksikosis T-2, *Escherichia coli*, ayam layer, histopatologi

ABSTRACT

ISOLATION AND IDENTIFICATION OF *Escherichia coli* AND THE HISTOPATHOLOGICAL PROFILE OF MYCOTOXICOSIS IN VARIOUS ORGANS OF LAYER CHICKENS FROM A PARTNER FARM OF PT. STARFEED, EAST JAVA

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Egg consumption in Indonesia remains low, necessitating an increase in the population of laying hens. However, such population growth may raise the risk of disease transmission. One of the diseases that may arise is T-2 toxicosis, which can be aggravated by complications such as colibacillosis, ultimately reducing hen productivity. This study aimed to isolate and identify the causative agent in laying hens exhibiting clinical signs of colibacillosis and T-2 toxicosis. The research involved necropsy of chicken samples following euthanasia via brachial vein embolism, with organ samples including liver, thymus, thyroid, kidneys, small intestine, and oral lesions from three chickens collected for hematoxylin-eosin (HE) slide preparation. Bacterial isolation was performed using eosin-methylene blue agar (EMBA), followed by Gram staining, biochemical tests, and pathogenicity testing using Congo red (CR) agar and the embryo lethality assay (ELA). The CR agar was incubated at 37°C for 24 hours and at room temperature for 48 hours, while the ELA involved 8-day-old embryonated chicken eggs inoculated with 0.2 ml of *E. coli* suspension (120 CFU) into the allantoic cavity and incubated for six days. Histopathological results showed oral submucosal necrosis, thymic atrophy, bile duct proliferation in the liver, and villous erosion in the small intestine. Bacterial isolation revealed *E. coli* colonies with a green metallic sheen, Gram-negative coccobacilli morphology, and biochemical profiles consistent with *E. coli*: yellow slant-butts in TSIA, positive for indole and MR, negative for VP and citrate, motile, and capable of fermenting glucose, lactose, sucrose, mannitol, and maltose. The CR agar test was negative, while the ELA showed 20% embryo mortality, indicating intermediate pathogenicity. It was concluded that the chickens were infected with avian pathogenic *E. coli* (APEC) of intermediate pathogenicity and concurrently experienced T-2 toxicosis.

Keywords: Colibacillosis, T-2 mycotoxicosis, *Escherichia coli*, layer chickens, histopathology