

PENGUJIAN EFEKTIVITAS EKSTRAK SAMBILOTO PENYARIAN AIR TERHADAP ISOLAT *Eimeria tenella* SECARA *IN VITRO* DAN *IN VIVO*

INTISARI

Tanaman sambiloto memiliki manfaatnya yaitu sebagai insektisida dan antimikrobia. Sambiloto dikembangkan sebagai alternatif pengganti antibiotika yang sudah mulai mengalami resistensi. Koksidiosis merupakan suatu penyakit yang banyak menyerang unggas dan menyebabkan hambatan produksi. Penelitian ini bertujuan untuk mengetahui kandungan dalam ekstrak, kemampuan dari ekstrak sambiloto, dan konsentrasi efektif dari ekstrak sambiloto yang dapat menghambat pertumbuhan *Eimeria tenella* secara *in vitro* dan *in vivo*. Penelitian ini terbagi dalam tiga tahap, yaitu uji fitokimia ekstrak, uji *in vitro* dan uji *in vivo*. Uji fitokimia ekstrak dilakukan dengan menggunakan spektrofotometer *Ultra Violet visible*, Kromatografi Lapis Tipis Densitometri dan *ultra-performance liquid chromatography*. Uji *in vitro* dilakukan dengan mengamati hambatan sporulasi yang terjadi pada berbagai konsentrasi ekstrak sambiloto. Uji *in vivo* dilakukan dengan pemeriksaan feses, skor lesi sekum dan histopatologi sekum ayam yang telah diinfeksi. Sebanyak 45 ekor ayam broiler yang telah diinfeksi menggunakan isolat *Eimeria tenella* dan terdiagnosa koksidiosis dibagi menjadi 5 kelompok yang terdiri dari kontrol negatif yang tidak diberi perlakuan, kontrol positif yang diberi perlakuan dengan kombinasi narasin dan nicarbazin 45 ppm, kelompok A5% yang diberi perlakuan dengan ekstrak sambiloto 5%, kelompok A10% yang diberi perlakuan dengan ekstrak sambiloto 10%, dan kelompok A20% menggunakan ekstrak sambiloto 20%. Perlakuan dilakukan satu kali sehari secara peroral selama 21 hari. Sebanyak 3 ekor ayam dinekropsi setiap 7 hari dari masing-masing kelompok. Analisa dilakukan menggunakan *one way ANOVA* untuk uji *in vitro* dan *in vivo*, Kruskal-Wallis dan Mann-Whitney test untuk skor lesi. Kandungan fitokimia ekstrak sambiloto yang terdeteksi dalam penelitian yaitu andrografolida, flavonoid, fenol, tanin, alkaloid, dan saponin. Hasil *in vitro* menunjukkan perbedaan signifikan pada isolat A10%, A20%, A50%, A75%, dan A100%. Analisa hasil uji *in vivo* menunjukkan bahwa konsentrasi efektif dari ekstrak sambiloto penyarian air terhadap *Eimeria tenella* yaitu 10%. Berdasarkan hasil penelitian, dapat disimpulkan bahwa ekstrak sambiloto mampu menghambat pertumbuhan *Eimeria tenella* dengan konsentrasi 10%.

Kata kunci: Ekstrak sambiloto, *Eimeria tenella*, *in vitro*, *in vivo*

EVALUATION OF THE SAMBILOTO AQUEOUS EXTRACT EFFECTIVITY IN *Eimeria tenella* IN VITRO AND IN VIVO

ABSTRACT

Sambiloto have insecticides and antimicrobial activity, which have started to experience resistance. Coccidiosis is a disease that often affects poultry and causes production constraints. This study was conducted to determine the content of the extract, the ability of the extract of sambiloto, and the effective concentration of the extract, which can inhibit the growth of *Eimeria tenella* in vitro and in vivo. This study was divided into three stages: extract phytochemical tests, in vitro tests, and in vivo tests. Extracted phytochemical tests were carried out using an ultraviolet visible spectrophotometer, Thin Layer Chromatography Densitometry, and ultra-performance liquid chromatography. The in vitro test was carried out by observing the sporulation inhibition that occurred at various concentrations of Sambiloto extract. The in vivo test was performed by examining the feces, cecal lesion scores, and organ histopathology in the cecum of infected chickens. A total of 45 broiler chickens that had been infected with *Eimeria tenella* isolate and diagnosed with coccidiosis were divided into five groups consisted of a negative control that was not administered any treatment, a positive control that was treated with a combination of narrative and nicarbazine 45 ppm, group A5%, which was treated with 5% Sambiloto extract, group A10%, using 10% Sambiloto extract, and group A20%, which received 10% Sambiloto extract. The treatment was administered orally once daily for 21 days. Three chickens were necropsied every 7 days in each group. Analysis was performed using one-way ANOVA for in vitro and in vivo tests and Kruskal–Wallis and Mann-Whitney tests for lesion scores. The phytochemical contents of the sambiloto extract detected in this study were andrographolide, flavonoids, phenols, tannins, alkaloids, and saponins. The in vitro test results showed significant differences in isolates A10%, A20%, A50%, A75%, and A100%. Analysis of the in vivo test results showed that the effective concentration of the water extract of sambiloto extract against *Eimeria tenella* was 10%. Based on these results, it can be concluded that Sambiloto extract can inhibit the growth of *Eimeria tenella* at a concentration of 10%.

Keywords: Sambiloto extract, *Eimeria tenella*, in vitro, in vivo