STUDI RUMPUT KEBAR (*Biophytum petersianum* Klotzsch) SEBAGAI ANTHELMINTIK *Haemonchus contortus* PADA KAMBING KACANG (*Capra hircus*)

INTISARI

Haemonchosis adalah penyakit yang disebabkan oleh infeksi cacing *Haemonchus* sp. Rumput Kebar merupakan tumbuhan asal Papua yang mengandung senyawa tanin dan memiliki potensi sebagai anthelmintik. Penelitian ini bertujuan untuk mengetahui morfologi cacing dewasa *Haemonchus contortus*, pengaruh infusa rumput Kebar terhadap *H. contortus* secara *in vitro* dan *in vivo*. Pemeriksaan morfologi dilakukan dengan mikroskop cahaya dan kamera lucida. Uji *in vitro*, pada uji penetasan telur, 1 mL suspensi berisi telur cacing masing-masing direndam infusa rumput Kebar dosis 20, 40, 60, 80, 100 mg/ml, levamisol 2 mg/mL dan NaCl fisiologis 0,62% dengan masing-masing 3 ulangan. Pada uji motilitas cacing dewasa, 9 cawan petri masing-masing berisi 10 ekor cacing dewasa, masing-masing diberikan infusa rumput Kebar dosis 1, 10, 20, 40, 60, 80, 100 mg/ml, ivermectine 1 mg/ml dan NaCl fisiologis 0,62% dengan masing-masing 2 ulangan. Konsentrasi lethal 50 (LC50) dihitung dengan metode *Reed and Muench.* Uji ultrastruktur permukaan tubuh cacing mati dengan SEM dan profil protein dengan SDS PAGE. Pada uji *in vivo*, sebanyak 15 ekor kambing betina umur 6-8 bulan dibagi 5 kelompok masing-masing terdiri 3 ekor. Semua kelompok diinfeksi 1000 larva infektif per oral setiap minggu selama 4 minggu. Pada minggu ke-6, 3 kelompok diberikan infusa rumput Kebar dengan dosis masing-masing 2 mg/mL, 4 mg/mL dan 6 mg/mL perhari selama 7 hari. Kelompok 4 diberi albendazole peroral dosis 3,8 mg/kg BB dan kelompok 5 tidak diberi obat. Pemeriksaan klinis, hematologi dan EPG dilakukan setiap minggu. Semua hewan diotopsi dan dianalisa patologi pada minggu ke-7. Data kuantitatif dianalisis statistik, hasil SEM, SDS PAGE dan histopatologi dianalisa deskriptif. Berdasarkan uji morfologi cacing pada penelitian ini adalah *Haemonchus contortus*. Hasil *in vitro*, dosis 10% infusa rumput Kebar paling besar menghambat daya tetas (89%) dan dosis infusa rumput Kebar 2% paling kecil menghambat daya tetas (38%). Dosis 10% infusa rumput Kebar dengan paparan 4 jam menyebabkan rata-rata kematian cacing paling besar (9,5 ekor) dan dosis 2% infusa rumput Kebar menyebabkan rata-rata kematian paling kecil (6 ekor). Nilai LC50 dengan paparan 4 jam adalah 15,83 mg/mL. Hasil SEM menunjukkan pengerutan, gelombang dan pengelupasan pada tegumen. Dosis 10% infusa rumput Kebar menghasilkan jumlah pita protein paling sedikit. Hasil *in vivo*, rerata berat badan, BCS, FAMACHA dan *dag score* mengalami kenaikan. Nilai RBC, Hb, PCV dan total protein meningkat. Nilai FECR kelompok perlakuan lebih tinggi dibandingkan kelompok kontrol negatif. Pada otopsi, kondisi karkas dan organ viseral pucat, lemak subkutan sedikit, usus halus hemoragi dan terdapat ascites dalam rongga perut. Banyak nodul dengan diameter antara 1,5-2,0 mm pada mukosa abomasum. Perubahan histopatologi kelompok control adalah infiltrasi sel radang, kongesti dan adanya potongan cacing.

Kata Kunci**:** anthelmintik, *Haemonchus contortus*, kambing, rumput Kebar

STUDY OF RUMPUT KEBAR (*Biophytum petersianum* Klotzsch) AS AN ANTHELMINTIC *Haemonchus contortus* IN KAMBING KACANG (*Capra hircus*)

ABSTRACT

Haemonchosis is one of parasitic diseases caused by *Haemonchus* sp. Rumput Kebar (RK) is endemic plants in Papua Indonesia which contains tannin which have the potential as anthelmintics. The aims of this study were to identify *Haemonchus* sp adult worms based on morphology and determine the effect of RK infusion on *H. contortus* in vitro and in vivo. Morphological examination was carried out with light and lucida camera. In vitro: in the egg hatch test, 1 mL of suspension containing egg's worm was soaked in the RK infusion at each doses of 20, 40, 60, 80, 100 mg/mL, levamisole 2 mg/mL and 0,62% saline water with 3 replications each. In the adult worm motility test, ten active adult worms were placed in 9 cm petri dishes containing 25 mL of RK infusion doses of 1, 10, 20, 40, 60, 80, 100 mg/mL, ivermectine 1 mg/mL and 0.62% saline water solution with 2 replications each. The LC50 was calculated using the Reed and Muench method. Ultrastructural change tests (SEM) and protein profiles (SDS PAGE) of adult worms were carried out on dead worms. In vivo: fifteen 6-8 month old female goats were used and divided into 5 groups. All groups were infected by 1000 infective larvaes per oral every week for 4 weeks. At 6 weeks after infection, 3 groups were given infusion doses of 2 mg/mL, 4 mg/mL and 6 mg/mL which given per day for 7 days. Group 4 was given 3.8 mg/kg albendazole orally and group 5 untreated as a control. Clinical examination, hematology test and FECR were conducted every weeks. All goats were euthanized for post mortem examination at week 7. All quantitative data were analyzed statistically, data from SEM, SDS PAGE and histopathology were used for descriptive analysis. Based on morphology test, worms were used in this study is *Haemonchus contortus*. The 10% dose has greatest inhibitory hatchability (89%) and the 2% dose revealed smallest hatchability (38%). The results of adult worm motility test, the dose of 10% with 4 hours exposure showed the highest average (9.5) and the dose of 2% revealed smallest average (6). The value of LC50 for 4 hours exposure was 15.83 mg/mL. The results of SEM showed wrinkled and corrugated cuticular surface and exfoliation of the tegument. The results of SDS PAGE with 10% doses infusion revealed fewest protein bands. In vivo: the average body weight, mean BCS, FAMACHA, dag score, RBC, Hb, PCV and total protein of post-treatment were increased compared to pre-treatment. The FECR values at treatment groups were found higher than negative controls. Pathology anatomy examination results showed pale of carcasses and visceral organs, had small amount of subcutaneous fat, small intestine hemorrhage and ascites fluid in the abdominal cavity. There were nodules found with diameters 1.5-2.0 mm at abomasal mucosa. Histopathological examination of the control groups showed the inflammatory of cell infiltration, congestion, and presence of adult worms.

Keywords: anthelmintic, *Haemonchus contortus*, goat, rumput Kebar