

INTISARI

Inovasi sumber hayati tumbuhan sebagai anthelmektika baru adalah penggunaan daun bambu apus (*Gigantochloa apus*) Penelitian ini bertujuan untuk mengetahui kandungan bahan aktif daun bambu apus, yang berpotensi sebagai zat anthelmektika. Secara *in vitro*, untuk mengetahui pengaruh daun bambu apus (*G. apus*) terhadap kematian cacing dewasa, telur, morfologi dan morfometri cacing dewasa, profil protein cacing, serta perubahan ultrastruktur cacing *Haemonchus contortus*. Secara *in vivo* untuk mengetahui pengaruh daun bambu pada kambing bligon terhadap profil darah, pemeriksaan klinis dan perubahan histopatologi abomasum. Cacing dewasa diperoleh secara langsung dari abomasum kambing yang terinfeksi secara alami yang dipotong di Rumah Potong Hewan (RPH). Abomasum pada bagian yang berbatasan dengan omasum dan duodenum dipotong dan diikat menggunakan tali. Isi abomasum dikeluarkan secara hati-hati dan parasit yang terlihat dikoleksi dalam kontainer berisi larutan *Phosphat Buffer saline* (PBS) atau NaCl 0,62%. Pemeriksaan morfologi cacing menggunakan mikroskop Olympus CX21. Pengukuran morfometri cacing dewasa dengan menggunakan alat bantu kamera lucida. Pemeriksaan klinis meliputi pertambahan berat badan, profil darah penurunan jumlah telur cacing (EPG), derajat anemia, BCS, Dag score, nasal discharge, kondisi rambut serta perubahan histopatologi abomasum. Jumlah sampel cacing yang diukur sebanyak 25 ekor Kandungan bahan aktif dalam daun bambu, morfologi *H. contortus*, profil protein perubahan histopatologi abomasum dianalisis secara deskriptif. Data morfometri cacing dewasa, vermisidal, ovisidal, secara *in vitro* dan kematian dewasa, FECR secara *in vivo* dianalisis menggunakan anova.

Hasil penelitian menunjukkan bahwa daun bambu apus (*G.apus*) mengandung tanin 8,81% b/b, tanin terkondensasi 0,105% b/b, saponin 1,55% b/b, dan flavonoid 8,12% b/b. Infusa daun bambu dosis 1 mg/mL mempunyai perbedaan yang nyata terhadap morfometri cacing *H. contortus* jantan dan betina. Hasil SEM menunjukkan adanya pengerutan, robekan pada kutikula, dan agregat dibagian anterior. Infusa daun bambu apus dosis 1,2 mg/mL mampu membunuh cacing dewasa 100% dan menghambat perkembangan telur 92,34%. LC50 untuk 2 jam adalah 0,475 mg/mL. Dosis 1 mg/mL menghasilkan pita protein paling sedikit baik secara *in vitro* dan *in vivo*. Hasil *in vivo* berat badan, BCS, FAMACHA, dan dag score mengalami kenaikan. Nilai WBC, RBC, Hb, dan PCV meningkat. Nilai FECR dosis 0,12 dan 0,18 mg/mL lebih tinggi dibanding dengan kontrol negatif. Perubahan histopatologi kelompok kontrol negatif terdapat infiltrasi sel radang, hiperplasia glandula, dan potongan cacing, sedangkan pada dosis 0,18 mg/mL masih ditemukan sedikit infiltrasi sel radang eosinofil. Hasil kajian dapat disimpulkan bahwa daun bambu apus memiliki kemampuan vermisidal, ovisidal, mempengaruhi perubahan morfologi dan morfometri, ultrastruktur, dan profil protein cacing *H. contortus* secara *in vitro*. Daun bambu apus memiliki daya anthelmektika terhadap cacing *H. contortus* berdasarkan gejala klinis, pemeriksaan darah, dan histopatologi abomasum secara *in vivo*.

Kata kunci : Bambu apus, *Haemonchus*, Anthelmektika, Kambing Bligon

ABSTRACT

One of the innovations in finding new anthelmintic was Apus bamboo (*Gigantochloa apus*). The study aimed at finding out active substance content of Apus bamboo leaves that had anthelmintic potential. In vitro effect of Apus bamboo leaves on the death of adult worms, and eggs, the morphology and the morphometri of adult worms, worm protein profile, and the change in the ultra structure of *Haemonchus contortus* worms. in vivo effect of Apus bamboo leaves on bligon goat, especially on blood profile based on the clinical examination of the decrease in the number of worm eggs (EPG) and on anemia level (FAMACHA ©), BCS, Dag score, nasal discharge, bottle jaw and the hair of the goat infected by *Haemonchus contortus* worms and the change in abomasums histopathology. Adult worms were directly obtained from naturally infected abomasums of the goats slaughtered in slaughtering house. The abomasums adjacent to rumen and duodenum were cut and tied using rope. The content of the abomasums were taken out and the observed parasites were collected in a container containing phosphate buffer saline (PBS) or 0.62% NaCl. The morphology of the worms was examined under Olympus CX21 microscope. The morphometri of the worms was measured using lucida camera. Clinical examination of average daily gain, the decrease in the number of worm egg (EPG), anemia level, BCS, dag score, nasal discharge, and the change in abomasums histopathology. There were 25 measured worms. The active substance content of the bamboo leaves, the morphology of *H. contortus*, histopathology changes and the protein profile were descriptively analyzed. The in vitro vermicial, ovicidal, data of the adult worms and the death of the adult worms, in vivo FECR were analyzed using ANOVA.

The results of the study showed that the Apus bamboo leaves (*G. apus*) contained 8.81% tannin ,0.105% b/b condensed tannin, 1.55% b/b saponin, and 8.12%b/b flavonoid. Bamboo apus crude extract had significantly effect on morphometry of male and female *H.contortus* in dose 1 mg/mL. The result of SEM revealed wrinkled and and ripped in cuticle, and agregated on anterior part. Bamboo apus crude extract could killed 100% adult worm and inhibited 92.34% egg worms to larva at dose 1.2 mg/mL. LC50 was 0.475 mg/mL at 2 hours.SDS PAGE revealed more less band protein in dose 1 mg/mL.The results of in vivo showed that there were increasing of average daily gain, FAMACHA, BCS, and dag score. FECR at dose 1,2 mg/mL and 1,8 mg/mL higher than negative control. There were eosinofilia, hiperplacia of glandula, and horizontal cutting of worm in negative control histopatology changes, but at dose 0,18 mg/mL there were more less eosinofilia and inflamation. The conclusion were apus bamboo leaves had vermicial, ovicidal effects on the change in the morphology and the morphometri of the *H. contortus* worms in vitro. The apus bamboo leaves had anthelmintic effect on the *H. contortus* worms based on clinical symptoms, blood examination, and in vivo abomasums histopathology.

Key word: Apus bamboo, *Haemonchus*, Anthelmintic, Bligon goat