

## INTISARI

### EFEKTIVITAS EKSTRAK METANOL LIMA JENIS ETNOFARMAKOLOGI DARI KABUPATEN KUPANG SEBAGAI ANTELMINTIK UNTUK PENGENDALIAN HAEMONCHOSIS PADA KAMBING KACANG (*Capra hircus*)

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Ekstrak lima jenis etnofarmakologi, yaitu Ekstrak Kulit Buah Muda *Calotropis procera* (EKB MCP), Ekstrak Kulit Pohon *Alstonia scholaris* (EKPAS), Ekstrak Daun Muda *Spondias pinnata* (EDMSP), Ekstrak Bunga Jantan *Carica papaya* (EBJCP), dan Ekstrak Daun Muda *Chromolaena odorata* (EDMCO), secara farmakognosi berpotensi sebagai antelmintik. Penelitian ini bertujuan untuk mengetahui efektivitas ekstrak lima jenis etnofarmakologi dari Kabupaten Kupang sebagai antelmintik untuk pengendalian haemonchosis pada kambing. Metode, sampel bubuk dari setiap etnofarmakologi sebanyak 10 g dilarutkan ke dalam 50 mL metanol, jadi 1 mL pelarut mengandung 0,2 g ekstrak. Penelitian tahap I, dibagi tujuh kelompok perlakuan, lima kelompok (EKB MCP, EKPAS, EDMSP, EBJCP, dan EDMCO), kontrol negatif (air suling) dan kontrol positif (pirantel pamoat 5%), durasi pemaparan dengan cacing *H. contortus*; 1, 3, 5, dan 7 jam. Data vermisisidal pada setiap perlakuan secara *in-vitro* dianalisis secara deskriptif. Penelitian tahap II dan III, daya ovisidal dan larvasidal dibagi lima kelompok yaitu tiga kelompok (EKB MCP, EKPAS, dan EDMSP), kontrol negatif (air suling) dan kontrol positif (albendazole 0,055%). Persentase daya ovisidal dan larvasidal secara *in-vitro* dianalisis menggunakan analisis varian (RAL), jika berbeda nyata dilanjutkan dengan uji Duncan. Penelitian tahap IV, kelompok perlakuan dikelompokkan menjadi empat kelompok, setiap kelompok terdiri dari lima perlakuan, yaitu EKPAS konsentrasi 0,5%, 1,5%, dan 2,5%, kontrol negatif (air suling) dan kontrol positif (pirantel pamoat 5%). Data penurunan tingkat infeksi (*FECR*) pada setiap kelompok menggunakan analisis varian (RAK). Jika berbeda nyata dilanjutkan dengan uji Duncan. Hubungan *FECR* dengan profil hematologi menggunakan koefisien korelasi Pearson's sedangkan status anemia berdasarkan metode Famacha<sup>®</sup> dianalisis secara deskriptif. Hasil penelitian, antelmintik paling potensial bersifat vermisisidal adalah EKPAS 0,005% dan EBJCP 0,005%. Persentase ovisidal EKPAS 0,75% tidak berbeda nyata ( $P>0,01$ ) dengan EDMSP 3,5% dan 4,5%, EKB MCP 2,5%, 3,5%, dan 4,5% serta kontrol positif. Persentase larvasidal EKPAS 0,5% dan 0,75% tidak berbeda nyata ( $P>0,01$ ) dengan EDMSP konsentrasi 3,5% dan 4,5%, EKB MCP 4,5% serta kontrol positif. Perlakuan EKPAS 0,5% memberikan pengaruh penurunan persentase tingkat infeksi tidak berbeda ( $P>0,05$ ) dengan EKPAS 1,5% dan 2,5% serta semua parameter hematologi berkorelasi dengan penurunan tingkat infeksi. Parameter RBC, Hb, dan PCV berkorelasi negatif dengan rataan penurunan skor = 2 (tidak anemia) sedangkan parameter WBC dan eosinofil berkorelasi positif, kecuali parameter neutrofil, basofil, dan limfosit tidak berkorelasi. Kesimpulan, EKPAS 0,005% dan EBJCP 0,005% memberikan efektivitas vermisisidal terbaik, EKPAS 0,75% efektivitas ovisidal paling potensial dan EKPAS 0,5% kandidat antelmintik bersifat larvasidal. Perlakuan EKPAS 0,5% merupakan kandidat antelmintik yang paling potensial secara *in-vivo*.

Kata kunci : Ekstrak etnofarmakologi, Famacha<sup>®</sup>, *Haemonchus contortus*, profil hematologi

## ABSTRACT

### EFFECTIVENESS OF METHANOL EXTRACTS FIVE TYPES OF ETHNIFARMACOLOGY FROM KUPANG REGENCY AS ANTHELMINTICS FOR HAEMONCHOSIS CONTROL ON KACANG GOAT (*Capra hircus*)

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Extracts of five ethnopharmacology species, rind of young *Calotropis procera* (EKB MCP), *Alstonia scholaris* bark (EKPAS), young leaves *Spondias pinnata* (EDMSP), tassel *Carica papaya* (EJC P) and young leaves *Chromolaena odorata* (EDMCO), pharmacognotically potentially as an antelmintic. This study aims to determine the effectiveness of five extracts types of ethnopharmacology from Kupang District as anthelmintic for controlling haemonchosis in kacang goat. The method are powdered sample of each ethnopharmacology was taken as much as 10 g then dissolved into 50 mL methanol, so 1 mL of solvent contained 0.2 g extract. The first phase of the study was divided into seven treatment groups, five groups (EKB MCP, EKPAS, EDMSP, EJC P, and EDMCO), negative control (distilled water) and positive control (pirantel pamoat 5%), duration of exposure with *H. contortus* worms; 1, 3, 5, and 7 hours. The vermifugal antelmintic data on each treatment *in-vitro* was analyzed descriptively. Phase II and III research, ovicidal and larvicidal power research were divided into five treatment groups, three groups of extract (EKB MCP, EKPAS and EDMSP), negative control (distilled water) and positive control (albendazole 0.055%). The percentage of ovicidal and larvicidal power *in-vitro* was analyzed using variance analysis (RAL), if significantly different followed by Duncan test. In the fourth phase of the study, the treatment groups were grouped into four groups, each group consisting of five treatments, namely EKPAS concentrations of 0.5%, 1.5%, and 2.5%, negative control (distilled water) and positive control (pirantel pamoat 5%). Data on rate reduction of infection based on *FECR* in each treatment group using variance analysis (RAK). If it is significantly different then proceed with Duncan test. The *FECR* connection with the hematology profile used Pearson's correlation coefficient while the anemic status based on the Famacha<sup>®</sup> method was analyzed descriptively. Result of research, the most potent vermifugal antelmintic results were EKPAS 0.005% and EJC P 0.005% compared to EKB MCP, EDMSP, and EDMCO. The percentage of ovicidal EKPAS 0.75% was not significantly different ( $P>0.01$ ) with 3.5% and 4.5% EDMSP, 2.5% EKB MCP, 3.5%, and 4.5%, and positive control. The percentage of larvicidal EKPAS of 0.5% and 0.75% was not significantly different ( $P>0.01$ ) with EDMSP concentrations of 3.5% and 4.5%, EKB MCP 4.5% and positive controls. The 0.5% EKPAS treatment had an effect of decreasing the percentage of infection rate not differing ( $P>0.05$ ) with 1.5% and 2.5% EKPAS and all hematologic parameters correlated with decreased infection rate. The parameters of RBC, Hb, and PCV were negatively correlated with a mean score reduction of 2 (not anemic) based on the Famacha<sup>®</sup> method while the WBC and eosinophil parameters were positively correlated, unless neutrophil, basophil, and lymphocyte parameters were uncorrelated. Conclusions, EKPAS and EJC P treatments have the most potential vermifugal power, 0.37% EKPAS treatment and 0.5% EKPAS of the ovicidal and larvicidal antelmintic candidates. The 0.5% EKPAS treatment is the most potent *in-vivo* antelmintic candidate.

Keywords: Ethnopharmacology extract, Famacha<sup>®</sup>, *Haemonchus contortus*, haematological profile