



Tropentag, September 17-19, 2013, Stuttgart-Hohenheim
“Agricultural development within the rural-urban continuum”

Antimicrobial and Antiparasitic in Vivo Activity of *Syzygium aromaticum* Extract clovein Weaned Guinea Pigs

LUIS JESUS LINARES OTOYA¹, JUNIOR NINA VEGA², MARIA VIRGINIA LINARES OTOYA³, GILMAR MENDOZA⁴, MELISSA BOCANEGRA³, RONALD CRISTIAN CHAMBE³, ANTONY LAZARO AVALOS³

¹University of Bonn, Agricultural Science and Resources Management in Tropics and Subtropics (ARTS), Germany

²University of Cordoba, Ecological Livestock, Spain

³Institute of Ecological, Agricultural and Urban Innovation UKU PACHA, Peru

⁴National University of Trujillo, Faculty of Agricultural Science, Peru

Abstract

In this study, antimicrobial and antiparasitic activity of the *Syzygium aromaticum* kloveextract was assessed in weaned guinea pigs. The experiment was conducted in a experimental farm in the district of Trujillo, Peru. Thirty animals were used in a randomised design with 3 treatments (T0: Application of 0.03 ml of saline; T1: oral dosage of 25 mg Sulfadimidine + trimethoprim kg BW⁻¹; T2: Dosing with 0.5 ml of *Syzygium aromaticum* extract). For counting of oocysts of *Eimeria caviae* and *Enterobacteriaceae*, fecal material and rectal swabs were collected before and 7 days after application. Statistical analysis included analysis of variance and Duncan test ($\alpha = 0.05$). T1 reduced fecal *Enterobacteriaceae* from $6.0 \pm 1.73 \times 10^6$ CFU g⁻¹ to $0.63 \pm 0.37 \times 10^6$ CFU g⁻¹ of fecal material, whereas T2 from $5.0 \pm 1.52 \times 10^6$ CFU g⁻¹ to $0.54 \pm 0.44 \times 10^6$ CFU g⁻¹ fecal material, a highly significant difference compared with T0 ($p < 0.01$). T1 had the highest reduction of *Eimeria caviae* in fecal material, decreasing from 90035.9 ± 36627.3 to 1462.4 ± 872.44 oocysts g⁻¹ fecal material (98.38%), More than T2 that reduced from 85896.6 ± 55531.5 to 5755.5 ± 3727.9 oocysts g⁻¹ fecal material (93.30%, $p < 0.05$). Both significantly reduced the excretion of *Eimeria caviae* compared to T0 ($p < 0.01$). The cost per dose was lower in T2 (S 0.04) compared to T1 (S 0.08). The cost of reducing 10,000 *Eimeria caviae* oocysts was lower in T2 than in T1 (S 0.005 and S 0.009). To present the clove extract orally is a cost-effective alternative for controlling enteric diseases and *Eimeria caviae* in guinea pigs.

Keywords: Antimicrobial, antiparasitic, guinea pigs, *Syzygium aromaticum*