

***IN VITRO* ANTIMICROBIAL ACTIVITY OF CRUDE EXTRACT OF FECAL
BACTERIA ISOLATED FROM PHILIPPINE NATIVE CHICKEN
(*Gallus gallus domesticus*) AGAINST *Staphylococcus aureus***

JOY HIDOCOS PASTORANO

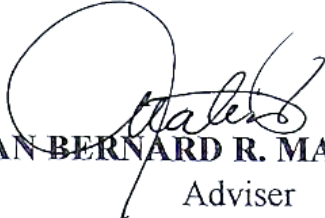
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ACCEPTANCE SHEET

This undergraduate thesis entitled "*IN VITRO* ANTIMICROBIAL ACTIVITY OF CRUDE EXTRACT OF FECAL BACTERIA ISOLATED FROM PHILIPPINE NATIVE CHICKEN (*Gallus gallus domesticus*) AGAINST *Staphylococcus aureus*", prepared and submitted by **JOY H. PASTORANO**, in partial fulfillment of the requirements for the degree of **DOCTOR OF VETERINARY MEDICINE**, is hereby accepted:

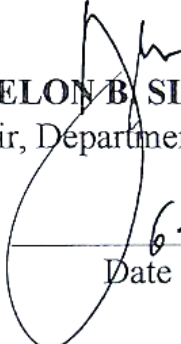

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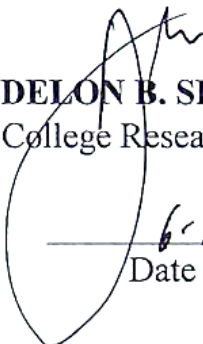

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BIOGRAPHICAL SKETCH

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ABSTRACT

PASTORANO, JOY H., College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2019**, ***IN VITRO* ANTIMICROBIAL ACTIVITY OF CRUDE EXTRACT OF FECAL BACTERIA ISOLATED FROM PHILIPPINE NATIVE CHICKEN (*Gallus gallus domesticus*) AGAINST *Staphylococcus aureus***

Adviser: FROILAN BERNARD R. MATIAS, DVM, MSc

Generally, the study evaluated the *in vitro* antimicrobial activity of fecal bacteria from Philippine native chicken against *S. aureus*. Specifically, this study (1) measured the antimicrobial activity of the crude extracts of fecal bacteria from Philippine native chicken cultured at different time interval (6, 12, 18, and 24h), and (2) compared with the selected antimicrobials using modified disc diffusion method.

Previously isolated fecal bacteria from Philippine native chicken were recultured on nutrient agar for 24h. A loopful of bacteria was cultured in nutrient broth at different time interval (6, 12, 18, and 24h). After each time interval, the broth culture was centrifuged at 6,000rpm for 15mins. The cell free supernatant (crude extract) was transferred in microcentrifuge tubes and stored in -20°C until further used. Filter paper disc (7mm diameter) with 20µl crude extracts from each isolates were prepared by initially impregnating each disc with 10µl crude extract then dried, followed by an additional 10µl then dried again. A spread plate culture of *S. aureus* on Mueller-Hinton (MH) agar was prepared. The prepared 20µl crude extract discs were evenly placed on the plate. An additional 10µl crude extract was impregnated in each disc. Antimicrobials discs (2µg clindamycin, 5µg enrofloxacin and 10µg penicillin V) were also placed on the

plate. The plates were incubated at 37°C for 18-24h. The zones of inhibition were measured using a vernier caliper. The data were analyzed using analysis of variance (ANOVA) followed by Tukey's highly significant difference (HSD). The level of significant difference was set at 95% confidence interval at a p value of < 0.05.

The crude extracts of fecal bacteria from different strains of Philippine native chicken have antimicrobial activity against *S. aureus* by forming various sizes of zone of inhibition. The 6h crude extracts had the most number of isolates with zone of inhibition. While, *Banaba* strain of Philippine native chicken had the most number of isolates with zone of inhibition. The crude extracts that produced zone of inhibition were significantly higher compared to clindamycin and penicillin V, but significantly lower compared to enrofloxacin.

Keywords: antimicrobial activity, crude extract, fecal bacteria, Philippine native chicken, *Staphylococcus aureus*

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