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

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An Undergraduate Thesis Submitted to the Faculty of the College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines in Partial Fulfilment of the Requirements for the Degree of

DOCTOR OF VETERINARY MEDICINE

JUNE 2019

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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BIOGRAPHICAL SKETCH

The author, Joy H. Pastorano, was born on June 09, 1997 in Brgy. Bungo, Gapan City, Nueva Ecija, Philippines. She was the second child and only daughter among the four children of Bobby C. Pastorano and Angelita H. Pastorano.

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ACKNOWLEDGMENT

The author would like to extend her sincerest gratitude and appreciation to the following people who have imparted their time and effort towards the completion of her study and for making this humble piece of work possible.

To her beloved parents, Bobby C. Pastorano and Angelita H. Pastorano, for the guidance, sacrifices, endless support, kindness, unconditional love, and for being simply the best;

To her siblings, Kuya Jing, Brando and Arjhon, for their support during the whole duration of conduct of this thesis;

To Dr. Froilan Bernard R. Matias, her adviser, for his supervision, support, patience, and pieces of advice during the preparation, conduct, and writing of the manuscript;

To Dr. Marvin Bryan S. Salinas, her critic, for giving his valuable support and suggestions for this paper;

To Dr. Fredelon B. Sison, her research coordinator, for checking this manuscript:

To her best friends, Vanesa Maey Matas, Lyza Doneva Gatmaitan and Chelzea Dianne Jimenez, for the joy of friendship and love. Her sincerest thanks for always being there though the worst and best moments of her college life;

To her thesis buddies, Elaine Vic Bachoco and Nathaniel Angelo Jan Camacam, for their appreciated help and support during the conduct of this thesis:

To all CLSU-CVSM faculty for the pieces of advice, support, and memorable lessons they taught;

To all the people whose names have been unintentionally missed but have help her achieve her goals, she is deeply grateful;

And above all, to the Almighty GOD for His wonderful blessings, and for the courage, and strength to carry on and for making life fulfilling amidst struggles, frustrations, and challenges that made her stronger.

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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***

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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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