ANTIMICROBIAL RESISTANCE PATTERN OF GRAM NEGATIVE ENTERIC BACTERIA ISOLATED FROM QUAILS (*Coturnix coturnix*) IN NUEVA ECIJA

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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 Fulfillment of the Requirements for the Degree

DOCTOR OF VETERINARY MEDICINE

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ACCEPTANCE SHEET

This undergraduate thesis entitled **"ANTIMICROBIAL RESISTANCE PATTERN OF GRAM NEGATIVE ENTERIC BACTERIA ISOLATED FROM QUAILS (*Coturnix coturnix*) IN NUEVA ECIJA,"** prepared and submitted by **MANUEL RENZ NICOLAS**, 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, Manuel Renz Nicolas was born on December 24, 1996 in Poblacion Norte, Licab, Nueva Ecija. He was raised in Licab, Nueva Ecija as the eldest son of Manuel P. Coeco and Maricel Nicolas.

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He is also engaged in extra-curricular activities as a member and a former President of Veterinary Student Achievers' Society, Central Luzon State University Chapter.

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ABSTRACT

NICOLAS, MANUEL RENZ, College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, Philippines, **June 2019, "ANTIMICROBIAL RESISTANCE PATTERN OF GRAM NEGATIVE ENTERIC BACTERIA ISOLATED FROM QUAILS (*Coturnix coturnix*) IN NUEVA ECIJA,"**

Adviser: DARLENE FE P. CASTRO, DVM, MSc
Co-Adviser: EMIECHELLE A. RIVERA, DVM

Quail farming in the country has been considered as one of the most promising livelihood programs. However, with the imminent threat of antibiotic resistance, it is crucial to determine which antibiotics are still effective against bacterial pathogens in quail. This study is therefore important in finding out which antibiotics are no longer effective in quails and to suggest a better medication program once a disease occur.

The study determined the antimicrobial resistance pattern of bacteria isolated from quails in Nueva Ecija through farm selection, sample collection, and subjecting the samples into a bacterial culture and antibiotic sensitivity testing. The antimicrobials being used in the farms were determined, and based on the survey result, enrofloxacin and streptomycin are the most commonly used antimicrobials as their feed and water additive. Some farms also use penicillin.

The antimicrobial resistance pattern of putative *E.coli* colonies against the 13 antibiotics (amoxicillin, aentiofur, cephalexin, doxycycline, erythromycin, kanamicin, neomicin, norfloxcin, penicillin, spectinomycin, sulfamethoxazole, tetracycline, tilmicosin) was determined. Results show that the isolated bacteria is resistant to amoxicillin, erythromycin, penicillin, spectinomycin, sulfamethoxazole, tetracycline, with

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tilmicosin. highest resistance to erythromycin, penicillin, spectinomycin, and sulfamethoxazole.

This study presents that the intensive use of antibiotics greatly increases the risk of antimicrobial resistance that could cause to a failure in treating infections that could lead to a high percentage of production loss.

Keywords: Quails; *Escherichia coli*; Antibiotic resistance; Antibiotic Sensitivity Test

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