

**SURVEILLANCE AND IDENTIFICATION OF ANTIMICROBIAL
RESISTANT *Escherichia coli* AND *Salmonella* IN LIVESTOCK
FARMS, MILK AND MEAT IN REGION V (BICOL)**

MARY ABEGAIL LUCIDO REYES

An Undergraduate Thesis Submitted to the Faculty of the College of Veterinary
Science and Medicine, Central Luzon State University,
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in Partial Fulfillment of the Requirements
for the Degree of

DOCTOR OF VETERINARY MEDICINE

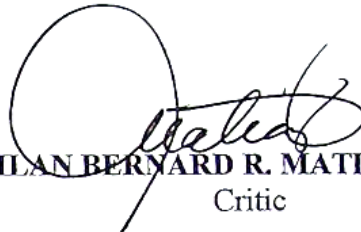
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ACCEPTANCE SHEET

This undergraduate thesis entitled “**SURVEILLANCE AND IDENTIFICATION OF ANTIMICROBIAL RESISTANT *Escherichia coli* AND *Salmonella* IN LIVESTOCK FARMS, MILK AND MEAT IN REGION V (BICOL)**”, prepared and submitted by **MARY ABEGAIL L. REYES**, in partial fulfillment of the requirements for the degree of **DOCTOR OF VETERINARY MEDICINE**, is hereby accepted:


RODOLFO F. MEDRANO JR., DVM, MSc
Adviser

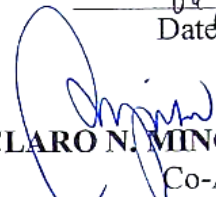
06/21/19
Date Signed


FROILAN BERNARD R. MATIAS, DVM, MSc
Critic

06/21/19
Date Signed


MARVIN A. VILLANUEVA, DVM, PhD
Co-Adviser

06/21/19
Date Signed


CLARO N. MINGALA, DVSM, PhD
Co-Adviser

06/21/19
Date Signed

Accepted as partial fulfillment of the requirements for the degree of **DOCTOR OF VETERINARY MEDICINE**:


FREDELON B. SISON, DVM, MVPH
Chair, Department of Pathobiology

06/24/19
Date Signed


FREDELON B. SISON, DVM, MVPH
College Research Coordinator

06/24/19
Date Signed


VIRGINIA M. VENTURINA, DVSM, PhD
Dean, College of Veterinary Science and Medicine

06/24/19
Date Signed

BIOGRAPHICAL SKETCH

Mary Abegail Lucido Reyes was born on December 7, 1996, in Iba, Zambales. Her loving parents Alexander and Cristina Reyes guided her from Elementary up until her college days together with the support of her siblings, Paulin Johanne, and Maria Alessandra. She finished her preparatory school in 2001 in Botolan South Central School at Paco, Botolan, Zambales and continued taking elementary education in the same school, where she graduated on 2008. Her 1st year as a secondary high school student was in Botolan National High School in Batonlapoc, Botolan, Zambales and transferred in Sta. Monica Parochial Institute, a Catholic school at Tampo, Botolan Zambales to continue her 2nd-year class. She spent 3 years in the Catholic school, gaining top 8 in the second year, top 6 in the third year and graduated as a 3rd honorable mention in the class of 2012. She took the entrance exam at Central Luzon State University in January 2012 and pursued to study there for college. She graduated last June 2017 with the degree of Bachelor of Science in Animal Husbandry. She is also a lifetime member of the Society for the Advancement of Veterinary Education and Research where she served as the Actuary (2016-2017) and Property Custodian (2017-2018). She is also grateful to all the people who are supporting her throughout the years and hoping for everyone to be blessed and happy.

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ABSTRACT

REYES, MARY ABEGAIL L., Doctor of Veterinary Medicine, College of Veterinary Science and Medicine, Central Luzon State University, Science City of Muñoz, Nueva Ecija, **June 2019, SURVEILLANCE AND IDENTIFICATION OF ANTIMICROBIAL RESISTANT *Escherichia coli* AND *Salmonella* IN LIVESTOCK FARMS, MILK AND MEAT IN REGION V (BICOL)**

Adviser: RODOLFO F. MEDRANO JR., DVM, MSc
Co-Adviser: MARVIN A. VILLANUEVA, DVM, PhD
CLARO N. MINGALA, DVSM, PhD

The study was done to identify the incidence of AMR in *Escherichia coli* and *Salmonella* spp. from poultry, livestock and their by-products in Bicol Region.

Samples of pork, beef, chicken meat, and milk, and environmental, rectal and cloacal swab were collected in three randomly selected municipalities in Camarines Norte namely: Basud, Daet and Jose Panganiban and four municipalities in Camarines Sur namely: Baao, Naga City, Pili and Sipocot. The collected samples were subjected to bacterial culture and biochemical test for confirmation of *E. coli* and *Salmonella*. The identified *E. coli* and *Salmonella* were then subjected to antibiotic sensitivity test (AST) using 14 antimicrobials.

Results showed that out of the 70 samples processed, 72.86% (51 samples) tested positive to *E. coli* and 7.14% (5 samples) tested positive to *Salmonella* spp. After performing AST, the *E. coli* isolates showed resistance to tetracycline, chloramphenicol, cotrimoxazole, ampicillin, and streptomycin. While the *Salmonella* isolates showed resistance to Nalidixic Acid, Ceftazidime, Cotrimoxazole and Streptomycin.

Keywords: Antimicrobial Resistance, *Escherichia coli*, *Salmonella*, Bicol Region

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