

**SURVEILLANCE AND IDENTIFICATION OF ANTIMICROBIAL
RESISTANT *Escherichia coli* AND *Salmonella* IN LIVESTOCK
FARMS, MILK AND MEAT IN ILOCOS REGION**

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An Undergraduate Thesis Submitted to the Faculty of the College of Veterinary
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DOCTOR OF VETERINARY MEDICINE

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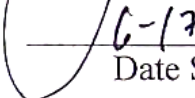
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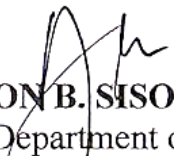

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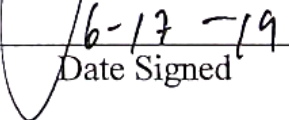

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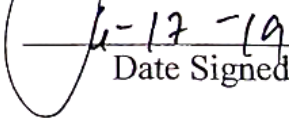
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BIOGRAPHICAL SKETCH

Christine Hope Parbo Parcon was born on December 21, 1996 in Balanga City, Bataan. Her loving mother Rhoda P. Parcon and grandparents Pedrito and Aurea Parbo and Exequiel and Josie Parbo guided her from the early stages of her life up to the present. She finished her pre-elementary (kindergarten) as first honors at Limay Elementary School in 2002. She continued her elementary education at Kids Garden Learning Center until the fourth grade. She transferred to a nearer school, the Gabaldon Elementary School where she graduated as 3rd Honorable Mention in 2008. She enjoyed her secondary education at Limay National High School and graduated in 2012. In that same year, she took the entrance exam at Central Luzon State University and luckily passed. She finished her two degrees namely Bachelor of Science in Animal Husbandry (2017) and Doctor of Veterinary Medicine (2019) in the same institution. She is also a lifetime member of the Veterinary Circle for 10 where she served as the Deputy General for Custody (2016-2017), Secretary-general (2017-2018) and Director for Ways and Means (2018-2019).

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ABSTRACT

PARCON, CHRISTINE HOPE P., 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 ILOCOS REGION**

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The study was conducted to determine the prevalence of antibiotic-resistant *Escherichia coli* and *Salmonella* spp. from the livestock and poultry animals and their products in the Ilocos region.

A total of 150 meat samples (pork, beef, and chicken meat), milk and swab samples (environmental, rectal and cloacal) were collected in the wet markets, supermarkets, abattoirs and livestock and poultry farms in seven (7) selected municipalities in Pangasinan namely Alaminos, Mangatarem, Calasiao, San Nicolas, Asingan, Natividad and San Quintin. After bacterial culture, the isolates were subjected to biochemical test for confirmation of *Salmonella* and *Escherichia coli* which then underwent antibiotic sensitivity testing in 14 different antimicrobials.

Results of bacterial culture and biochemical testing revealed that 53.33% (40/75) of the collected samples were positive to *E. coli* and 10.67% (8/75) to *Salmonella*. Antibiotic sensitivity test results showed that *E. coli* and *Salmonella* spp. were highly resistant to tetracycline, chloramphenicol, cotrimoxazole, ampicillin, streptomycin and gentamicin. The most frequent resistance pattern found in Ilocos *E. coli* isolates was AMP-C-COT-K-TET and AMP-TET for *Salmonella*. From the total number of *E. coli*

and *Salmonella* sp. isolates, 63.24% and 100% were observed to be multi-drug resistant strains, respectively.

Keywords: Antimicrobial resistance; *Escherichia coli*; *Salmonella*; Ilocos region

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