

PREVALENCE AND ANTIBIOTIC SENSITIVITY PROFILE OF *Escherichia coli* IN THE FECES OF PIGLETS (*Sus scrofa domestica*) FROM  
SELECTED BACKYARD FARMS IN CAVITE, PHILIPPINES

THESIS

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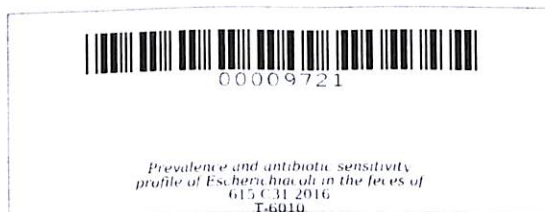
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IN THE FECES OF PIGLETS (*Sus scrofa domestica*) FROM SELECTED  
BACKYARD FARMS IN CAVITE, PHILIPPINES**

Undergraduate Thesis  
Submitted to the Faculty of the  
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Doctor of Veterinary Medicine



**MARICHRIS PADUA CAUNAN**  
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## ABSTRACT

**CAUNAN, MARICHRIS P.** Prevalence and Antibiotic Sensitivity Profile of *Escherichia coli* in the Feces of Piglets (*Sus scrofa domesticus*) from Selected Backyard Farms in Cavite, Philippines. Undergraduate Thesis. Doctor of Veterinary Medicine. Cavite State University, Indang, Cavite. April 2016. Adviser: Dr. Ma. Cynthia N. Rundina-Dela Cruz.

A total of 108 pre-weaning piglets regardless of health status from selected backyard farms in Cavite, Philippines were used in this study. Based on the morphological, cultural and biochemical characterization, 20.4% (22/108) of the samples were positive for *E. coli*, with 1.8% (2/22) being hemolytic. These hemolytic *E. coli* were recovered from both diarrheic and clinically healthy piglets sampled.

Evaluation of antibiotic sensitivity profile of the isolates revealed that 100% of *E. coli* isolates were susceptible to amikacin. On the other hand, the isolates showed resistance to the following antibiotics: ampicillin (100%), trimethoprim-sulfamethoxazole (63.6%) and tetracycline (59.1%). Intermediate susceptibility to kanamycin was observed in 91% (20/22) of the isolates, while the remaining 9% (2/22) showed resistance to this drug. Six different antibiotic resistance patterns were recorded and the A-T-TS (ampicillin-tetracycline-trimethoprim-sulfamethoxazole) was the most common resistance pattern, observed in 10 (45.5%) of the *E. coli* isolates. Overall, 11 (50%) isolates were determined to be multidrug resistant.

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**Marichris Padua Caunan**

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An undergraduate thesis manuscript submitted to the faculty of College of Veterinary Medicine and Biomedical Sciences, Cavite State University, Indang, Cavite, in partial fulfillment of the requirements for the degree of Doctor of Veterinary Medicine with Contribution No. 11. Prepared under the supervision of Dr. Ma. Cynthia N. Rundina-Dela Cruz.

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**INTRODUCTION**

*Escherichia coli* is one of the main inhabitants of the intestinal tract of mammalian species. Until the 1950s this microorganism was regarded as a normal non-pathogenic cohabitant of the enteric tract. However, during the last decades, a remarkable amount of research has established *E. coli* as among the important etiologic agents of enteritis and several extraintestinal diseases (Martins *et al.*, 2011).

A prevalence study was conducted in Thailand wherein a total of 100 rectal swabs from diarrheic piglets were sampled. As a result there were 98 *E. coli* strains isolated, 38 strains from suckling and 60 strains from weaning piglets. Furthermore, 11.2% of the total *E. coli* strains were enterotoxigenic (ETEC) (Pachanon *et al.*, 2013).

Antimicrobials have been commonly used to control and prevent *E. coli* infections in swine herds. The occurrence of multidrug-resistant *E. coli* isolates has rapidly increased in recent years and has become a very important issue. The determination of