

ANTIBIOGRAM OF ENTEROHEMORRHAGIC *Escherichia coli* (EHEC)  
IN THE FECES OF NATIVE CHICKENS (*Gallus gallus* L.) FROM  
SELECTED FARMS IN UPLAND CAVITE, PHILIPPINES

THESIS

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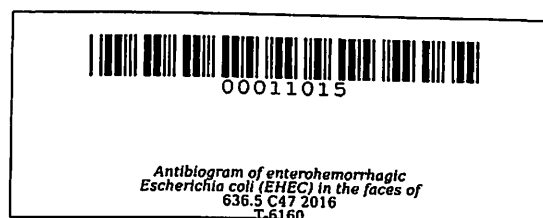
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degree of Doctor of Veterinary Medicine



**JONATHAN OSIS CHUA**  
April 2016 ✓✓



## ABSTRACT

**CHUA, JONATHAN O. Antibigram of Enterohemorrhagic *Escherichia coli* (EHEC) in the Feces of Native Chickens (*Gallus gallus L.*) from Selected Farms in Upland Cavite, Philippines.** Undergraduate Thesis. Doctor of Veterinary Medicine. Cavite State University, Indang, Cavite. April 2016. Adviser: Dr. Ma. Cynthia R. dela Cruz.

The purpose of this study is to isolate enterohemorrhagic *Escherichia coli* (EHEC) in the fecal samples of native chickens and determine its antibacterial susceptibility profile. One hundred fecal samples from native chickens from selected farms in upland, Cavite were used to determine the prevalence of EHEC in the area. Fecal samples from cloacal swabs were initially placed in a sterile Brain-Heart Infusion Broth (BHI). Fourteen samples have shown clear, pale colored colonies when grown in Sorbitol Mac Conkey Agar (SMAC) characterizing presumptive Enterohemorrhagic *Escherichia coli*. There were a total of 8 *E. coli* organisms identified through biochemical methods. Among the 8 presumptive *Escherichia coli* isolates which generated negative for sorbitol oxidation and fermentation, only one isolate generated positive result for hemolysis test and therefore considered to be pathogenic, having a hemolytic prevalence of 1% (1/100). The antibiotic susceptibility test of the isolated organisms is found to be 100% susceptible to Enrofloxacin, 62.5% to gentamicin, 50% to Trimethoprim-sulfamethoxazole and 12.5% to spectinomycin. On the other hand, the isolates were 100% resistant to Bacitracin, Erythromycin, Neomycin and Penicillin G based on the standard set by CLSI. This study showed that multidrug resistant EHEC isolates were found in native chickens and can be a source of infection to other animals and humans.

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An undergraduate thesis manuscript submitted to the faculty of the Department of Immunopathology and Microbiology of the 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. \_\_\_\_\_. Prepared under the supervision of Dr. Ma.Cynthia Rundina – Dela Cruz.

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## **INTRODUCTION**

*Escherichia coli* is one of the most common bacteria of the gastrointestinal tract of humans and other warm-blooded animals. Although most strains of *E.coli* are harmless, some strains however, such as enterohemorrhagic *E.coli* (EHEC) is an exemption as it cause abdominal cramps, bloody diarrhea and vomiting (WHO, 2011). The most notorious member of the EHEC group is *E. coli* O157:H7. It is a highly virulent microorganism with low infectious dose: an inoculation of fewer than 10 to 100 CFU (Colony Forming Unit) of *E.coli* O157:H7 is sufficient to cause infection relative to other pathogenic strains of *E.coli* (Greig, 2010). This strain of *E.coli* is transmitted primarily through consumption of infected foods, such as raw and undercooked meat products, raw milk and contaminated raw vegetables and sprouts.

Based on the statistics made by BAS in 2007, it is estimated that 55% of the total heads of chickens in the country are accounted for native chickens raised in backyard farms of rural households. Native chickens, due to increasing popularity as meat source