

ABSTRACT

AUSTRIA, CLARICE E., FATIMA M. OLIVER, AND DORINNE R. ULIBAS, Influence of Roasting on Antimicrobial Activity of Four Philippine Coffee Varieties against Food – borne Pathogens. Undergraduate Thesis. Bachelor of Science in Medical Technology, Cavite State University, Indang, Cavite, April 2013. Adviser: Ronalyn S. Sanchez, RMT.

This study was conducted from May 2012 to September 2012 at the Department of Medical Technology, College of Nursing, Cavite State University, Indang, Cavite. The study aimed to determine the phenolic content and the effect of roasting on antibacterial activity of four Philippine coffee varieties against selected food – borne pathogens. Coffee beans were collected from the National Coffee Research Development and Extension Center, Cavite State University. The samples were roasted in varying degrees and were utilized.

The Folin – Ciocalteu method was used to quantify the total phenolics on the aqueous extracts of the four Philippine coffee varieties roasted in different degrees. The cup plate diffusion method was used to assess the antibacterial activity of four Philippine coffee varieties against *Bacillus cereus* and *Salmonella typhii*. Furthermore, Minimum Inhibitory Concentration (MIC) was done on coffee variety that produced the highest zone of inhibition against test organisms.

The highest phenolic content was observed in lightly roasted Robusta that showed 0.295 mg gallic acid equivalent (GAE) per 100g sample.

The zone diameter of inhibition that showed a sensitive reaction to the green beans extract of Robusta was exhibited by *Salmonella typhii* measuring 30.677 mm. On the other hand, *Bacillus cereus* was found sensitive to the green beans of Excelsa at 24.333 mm and

Salmonella typhii at 22.333 mm. The population of *Coffea robusta* showed the strongest antibacterial activity.

In Minimum Inhibitory Concentration (MIC), the green bean extract of Robusta was found to inhibit *Salmonella typhii* at a minimum concentration of 25 mg/ml. Green beans of Excelsa inhibited the growth of *Bacillus cereus* and *Salmonella typhii* at a minimum concentration of 3.125 mg/ml and 12.5 mg/ml, respectively.