A Study on the Effect of Gamma-irradiation on the Antioxidant Properties and Caffeine Content of *Kapeng Barako* beans

Joriz Kevin D. Abel, Carl Joshua M. Chianpian and Jade Dungao Trono

Abstract: There are a lot of people drinking coffees every day. Caffeine is one of the main reasons for coffee consumption. It has numerous effects on the body's metabolism, including stimulating the central nervous system. Antioxidants are also found in coffee adding more health benefits for the consumers. The aim of this study was to compare the antioxidant properties and caffeine content of coffee beans irradiated with gamma irradiation and unirradiated ones. The study was only limited to the antioxidant phenols and flavonoids. Folin- Ciocalteu colorimetric method and ultraviolet wavelength spectroscopy was used to determine the phenolic content and flavonoid content respectively. The 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging activity was used to determine the antioxidant activity. The caffeine content was also measured using ultraviolet wavelength spectroscopy. Results showed that irradiation increased the antioxidant properties and caffeine content of the coffee beans. This study concluded that exposing coffee beans to gamma irradiation increases its all around health benefits.

Figure 1. Kapeng Barako (L), Irradiated (R)

Figure 2. Coffee grinder

- Phenolic Content
- Flavonoid Content
- DPPH radical scavenging activity
- Caffeine Content

De La Salle University
Manila