Effects of gamma irradiation on tropomyosin allergen, proximate composition and mineral elements in giant freshwater prawn (*Macrobrachium rosenbergii*)

ABSTRACT

Effects of food irradiation on allergen and nutritional composition of giant freshwater prawn are not well documented. Thus, this study aimed to investigate the effects of gamma irradiation on tropomyosin allergen, proximate composition, and mineral elements in *Macrobrachium rosenbergii*. In this study, prawn was peeled, cut into small pieces, vacuum packaged and gamma irradiated at 0, 5, 7, 10 and 15 kGy with a dose rate of 0.5 kGy/h using cobalt-60 as the source, subsequently determined the level of tropomyosin, proximate composition and mineral elements respectively. The results showed that band density of tropomyosin irradiated at 10 and 15 kGy is markedly decreased. Proximate analysis revealed that moisture, protein, and carbohydrate content were significantly different as compared with non-irradiated prawn. Meanwhile, gamma irradiated *M. rosenbergii* at 15 kGy was observed to be significantly higher in nickel and zinc than the non-irradiated prawn. The findings provide a new information that food irradiation may affect the tropomyosin allergen, proximate composition and mineral elements of the prawn.

Keyword: Gamma irradiation; Giant freshwater prawn; Tropomyosin; Proximate composition; Mineral elements