

# Effect of low dose gamma irradiation and refrigeration on the chemical and microbial quality of shrimp (*Penaeus monodon*)

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## SUMMARY :

The present investigation is aimed at studying the effect of gamma irradiation (1, 3 and 5 kGy) and subsequent storage at refrigeration temperature (4°C) on the chemical, microbial quality and extended shelf-life of shrimp (*Penaeus monodon*). The total volatile base nitrogen (TVB-N) and trimethyl amine nitrogen values (TMA-N) of the irradiated shrimp samples significantly decreased in comparison with the control (non-irradiated) stored at 4°C. The thiobarbituric acid values for the irradiated shrimp was significantly lower than of the non-irradiated samples stored at 4°C (p<0.05). The pH value of the shrimp was affected significantly by both, irradiation dose and storage temperature (p<0.05). The total microbial load for the non-irradiated shrimp samples was higher than those of irradiated samples at 4°C temperature. The results revealed that the combination of low dose gamma irradiation and refrigeration storage resulted in overall reductions of microbial loads and stabilized the biochemical characteristics of shrimp.

**KEY WORDS :** Gamma irradiation, Refrigeration storage, TBARS, TMA-N, *P. monodon*

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