

Comparative Assessment of microbial load of the dose depended irradiated crab meat under cold preservation

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Irradiation has, of late, been recognized as a potential tool to improve the shelf life and safety of meat and meat products by restraining the pathogenic and spoilage microbes. The present study attempts to make comparative assessment of the microbial load of the various tissues of the edible crab, *Scylla serrata* after a dose - dependent irradiation and subsequent storage at freezing temperature (-20°C). The tissues such as hepatopancreas, muscle and gills were irradiated at 0.5, 1.0 and 2.0 kGy using 10MeV gamma rays at a dose rate of 3.8 kGy/h. The irradiated sample tissues were examined for the presence of microbes soon after irradiation (0 days) and after preservation at -20°C at various time intervals of 7, 14, 21 and 28 days. The data on the microbial population were compared with those of non-irradiated controls maintained simultaneously. The microbial load showed statistically significant ($P < 0.001$) decrease in all the irradiated samples irrespective of their irradiation dosage and the types of tissues compared to those of the controls; and the decrease in the microbial load of the tissues irradiated with a dosage of 1.0 kGy is statistically comparable to those of the tissues that received 2.0kGy throughout the duration of the experiment (28 days), signifying that the radiation dosage of 1.0 kGy could be considered as the optimum dosage of preservation of the crab meat for at least four weeks. Our comparative analysis further showed that microbial load (due to irradiation) of each type of tissue has a specific pattern of microbial load irrespective of irradiation doses ((0.5, 1kG and 2kG) and time intervals (0, 7, 14, 21 and 28 days); maximum microbial load was noticed in gills, intermediate level in hepatopancreas and minimum level in muscles. The present paper also discusses the possibility to optimize of the irradiation dose to preserve the crab meat under 0 level microbial loads.

Biography

Arshad Keethadath has been doing research on the topic "The effect of irradiation on crustaceans with special reference to edible crabs" under the UGC-MANF Fellowship program. He has been worked as Project fellow under the DAE project, Govt. of India during the period from 2009-2012. He has 13 publications in the proceedings/abstract volume of National/international conferences. He has also presented a paper on DNA Fragmentation in irradiated tissues in an International conference held at Bharathiyar University, Coimbatore in 2011.

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Effect of caffeine on cognitive functions and behavioral symptoms of rats

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Cognition refers to things like memory, learning, speech and reading comprehension. Factors like aging, anxiety, depression and disease like Alzheimer, Huntington, may affect cognitive function. Caffeine, worldwide consumed Methylxanthine stimulant drug is well characterized as a neuro modulator with known effect on motor behavior information processing and cognitive performance. It shows the effect according to age, sex, time of day, type of administration and dose. It affects all type of memory. We studied some of the characteristics of this psychoactive drug using an animal model. 12 adult male rats were used for study which divided into 3 groups of which one was control. Second was administered low dose of caffeine (10mg/kg) and the third was administered high dose (30mg/kg), according to their weight. The result of the study show that low dose of caffeine increases the memory and learning (positive effect), high dose decreases memory and learning (negative effect), But in case of anxiety there was a reverse effect.

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