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Feasibility of gamma radiation and refrigeration on the chemical and sensory properties and microbiological status of marine fish lutke's halfbeak (*Hemiramphus lutkei*)

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Irradiation is considered one of the most efficient technological processes for the reduction of microorganisms in food. It can be used to improve the safety of food products, and to extend their shelf lives. The aim of this study was to evaluate the effects of gamma irradiation and frozen storage as a combination process for improvement of shelf life. Fillets of *Hemiramphus lutkei* were treated with 0 (control), 1.5, 3.0, and 5.0 kGy of gamma irradiation and held frozen for 3 months. The control and irradiated samples were stored at -18oC and underwent microbial analysis, chemical characteristics and sensory evaluation at 1 month intervals. Microbial analysis indicated that irradiation and freezing storage had a significant effect ($P < 0.05$) on the reduction of microbial loads. There was no significant difference in sensory quality and chemical characteristics during freezing storage of *H. lutkei*. The combination of frozen storage plus irradiation resulted in greater overall reductions on microbial loads, extending shelf life of fish meat for commercial application.

Biography

S. R. Sunith Shine was an Indian graduate who had his Master Course and Master of Philosophy in the field of 'Marine Biotechnology' in Center For Marine Science And Technology (C.M.S.T) Manonmaniam Sundaranar University and now he was pursuing his Ph.D. at Scott Christian College (Autonomous), Nagercoil Which is affiliated to Manonmaniam Sundaranar University, Tirunelveli. He obtained 4th rank in PG at university level. He attained post graduate scientific training from Bio-tech Consortia of India Limited (BCIL) Via Xpression Biotech, Bangalore. His doctoral programme focuses on the invention of newer technology which amends the use of Gamma rays in the role to perform preservation of Sea food and allied products. His areas of research interest include Post Harvest Technology, Microbial Security of Sea-food, Quality and risk assessment. Currently he was working as SRF in BRNS funded project on Radio-preservation Studies. He is a life member of Marine Biological Association of India, Kochi and Health physics Society, USA. He was born in 1985 in Kerala.

Comparison of pectinase production from *Aspergillus Niger* grown on agro waste using solid state and submerged fermentation

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Pectinase is a general term for enzymes which break down pectin, such as Pectin lyase, Pecctozyme and Polygalactouranase. Pectinase enzyme is extensively used in fruit processing industries for clarification of fruit juices and wines, in the extraction of fruit juices, in the manufacturing of pectin free starch, curing of coffee, cocoa and tobacco, refinement of vegetable fibre and as an analytical tool for the estimation of plant products. Orange peel and wheat bran were used as agro waste substrates and a nutrient solution composed of different inorganic salts were added to the substrate. Solid state fermentation was carried out in 250ml flasks containing 5g substrate and 5ml nutrient solution. The flasks were incubated at 270C for 7 days. Submerged fermentation was carried out in 500ml flasks containing 40g substrate, 50ml nutrient solution and 150ml distilled water. The flasks were incubated at 270C in a rotary shaker. At every 24hr interval a sample was taken, filtered and centrifuged at 10000rpm for 20min. Pectinase assay and Lowry assay were conducted to estimate enzyme activity and protein content respectively. Results of both fermentation techniques were compared to determine which fermentation method produces more amount of enzyme.