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Monitoring radioactivity in vegetables and associated health assessment

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The activity concentration of radionuclides such as ^{226}Ra, ^{228}Th, ^{238}U and ^{40}K were determined in vegetables cultivated in a high background radiation area, Midalam, situated in south west coast of India. The measurements were carried out using a 3" x 3" NaI gamma spectrometry. The radionuclides activity of ^{226}Ra, ^{228}Th, ^{238}U, ^{40}K in soil and vegetable samples were also studied collecting samples at 10 sampling points around Midalam. Maximum activity was found in (*carica papaya*) Papaya and (*Moringa oleifera*) drum stick compared to the other vegetable samples. The transfer factor for ^{226}Ra, ^{228}Th, ^{238}U and ^{40}K were estimated. The radioactivity concentration and the relative dose were found below the permissible limits.

Biography

J. Eugin Shaji was an Indian graduate who had his Master course in Chemistry. He was also pursuing his Ph.D at Manonmaniam Sundaranar University, Tirunelveli. Currently, he was working as a lecturer in St. Judes Polytechnic College, Tholayavattam. His areas of research interest include Environmental Radiation Chemistry, Risk assessment, Radiation Impact. He was born in 1985 in Tamil Nadu.

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Study of colloidal particles in beer before filtration process

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The main objective of this work is to study the effect of colloidal particles and yeast on turbidity of Pilsen beer before the filtration process. The colloidal particles are mainly composed of polysaccharides, representing 96.89%, in second place proteins with a concentration close to 2%; and polyphenols less than 0.3%. There is also a very low concentration of yeast (<0.25%). The presence of different types of particles in the sample caused multimodal histogram in the particle size distribution and four distinct zones were identified: (i) very small individual particles (= 0.06 μm); (ii) yeast (= 3 μm); (iii) colloidal aggregates (= 17 μm) and (iv) a zone with a high dispersion of size, with two values (101 and 200 μm). Particles size counts well correlate with both the scanning electron microscopy (SEM) digital image analysis, and the turbidity determination. The fractal dimension (Df) of the aggregates was determined by analyzing the SEM images with the Variogram method, obtaining $D_f > 2.4$ values. Those values are typical of aggregates formed by rapid flocculation or diffusion limited aggregation. Results of this study support the formulation of a model valid for the prediction of colloidal particles concentration in beer.

Biography

Lozano, Jorge Enrique has completed PhD in Chemical Engineering from National University of the South, Argentina in 1988. He is Full Professor in Food Engineering at the same University and a member of the National Science and Technology Council of Argentina. He published more than 80 papers in reputed journals, two books and several chapters on food science and technology. He also serves as an editorial board member of the Journal of Food Process Engineering (since 1998) and the Food Engineering Reviews (Since 2008)

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