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Determination of heavy metal stress on bacterial diversity

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In the present study total thirty heavy metal resistant bacteria were isolated from sewage of industrial effluents, garages and petrol pumps of Cachar district of Assam, India, against copper, zinc, and lead. Samples were streaked on selective media's and incubated at 37^0C for 24 hrs for recovery of potent isolates. The isolated and distinct colonies were sub-cultured and obtain in the form of pure culture and identified on the basis of their morphology and biochemical characters. There were decreases in total count and microbial population diversity with increasing metal concentrations and the predominant isolates obtained were Pseudomonas sp., Klebsellia sp. and Bacillus sp. Some isolates exhibited high resistance to heavy metals with minimum inhibitory concentration (MIC) for heavy metals as 50µg/ml (for copper), 180 µg/ml (for lead) and 1500µg/ml (for zinc). They also showed multiple heavy metal tolerance and were multi antibiotic resistant.

Biography

Soumitra Nath is a Research Scholar from Bioinformatics Centre, Gurucharan College Silchar under DBT funded project and registered for his Ph.D in Department of Microbiology, Assam University, Silchar (AUS). He has completed his Master degree from Department of Biotechnology, AUS and PG Diploma in Bioinformatics from Department of Life Science, AUS. He has also been appointed as Lecturer in Department of Biotechnology and Bioinformatics Centre of Gurucharan College, Silchar. His research aim is to find an efficient soil-bacteria for better crop production in heavy metal contaminated crop field.

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Formulation and quality evaluation of hot beverage nutritive soya fee as a substitute of coffee

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The soya bean (Glycine max L. Merrill) has been called the "miracle crop" because of its vast array of uses. They are rich in protein and contain beneficial phytochemicals such as iso- flavones, which may help fight chronic diseases. Coffee contains caffeine which can, in due course of the time, increase risk of heart diseases, insomnia or disrupted sleep, infertility problems, high blood pressure, miscarriage, panic, anxiety and overall stress and a horde of other diseases. Hence, hot beverage nutritive soya fee was prepared. Soaked, split and dried soya beans were roasted at two temperatures 170^0C (T_1) and 160^0C (T_2) for 8 minutes up to dark brown and medium brown colours which were then coarsely ground and used to make a beverage that tastes quite similar to coffee with the addition of cardamom and ginger powder in the milk. Samples were evaluated at the intervals of 15, 30, 45 and 60 days for sensory and chemical analysis. It was found that moisture content was slightly increased; fat and protein content were slightly decreased during storage whereas no significant difference in ash content of samples T_1 and T_2 was noticed during the storage. On the basis of overall sensory attributes, colour of sample T_1 has better appearance as compared to T_2. Flavour, Aroma, Taste, After Taste and Overall Acceptability of sample T_1 has got higher score than sample T_2 because of the dark brown colour of the powder. Its score slightly decreased during storage. After chemical analysis, it was found that sample T_2 had high percentage of protein and other nutrients. The shelf life of product was stable up to 60 days during storage period.

Keywords: Soya bean, Hot Beverage Nutritive Soya fee, Coffee, Protein, Roasting, Powder.

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