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Food safety, current scenario and public health in Bangladesh

Luthfunnesa Bari, Md. Abu Zubair, Shahinul Haque Khan, Ariful Islam, M R Hoque, Beauty Akter and **M K Sadia**
Mawlana Bhashani Science and Technology University, Bangladesh

Unsafe food is a major public health concern from farm to table in Bangladesh. This study was taken to measure synthetic colors, preservative, formaldehyde and adulterants from various food samples by high performance liquid chromatography and other laboratory methods. We conducted a random survey using a structured questionnaire on the use of chemicals for the quick ripening of banana, papaya, lychee and in rice and puffed rice processing. The toxic effects of synthetic food color tartrazine on hematobiochemical parameters in mice was studied. The result showed that sunset yellow in 5.5% orange jelly, carmosine in 15.6% candies, sodium benzoate in 22% fruit drinks were above the permissible limit and 5.15% orange jelly used unknown color in total 180 samples. From 240 samples of fruits, noodles and fish, we found that 17% mango, 15% apple & 23% grape contained formalin above the permissible limit. From a random survey, it was found that dye, urea, alum, wax, even detergents were used during processing of rice and 11.5% non-permitted chemicals were used in lychee during growth, ripening and storage period. Among 30 samples of milk, starch, skim milk, sodium bicarbonate and borax were identified in 23%, 15%, 13.33% and 11.66% milk sample. Platelet, white blood cell, and monocyte counts of tartrazine treated group were significantly higher where Hb and red blood cell counts were drastically lower than the control group. The biochemical parameters such as serum alanine aminotransferase, aspartate aminotransferase, alkaline phosphatase, total protein, globulin, urea, and creatinine level were significantly increased, while serum cholesterol level was decreased after treatment as compared to the control. So it was considered that consumption of high doses tartrazine have adverse effects on blood serum activity and organ functions in mice.

Speaker Biography

Luthfunnesa Bari is an associate professor in the department of Food Technology and Nutritional Science at Mawlana Bhashani Science and Technology University in Tangail, Bangladesh where she has been since 2007. From 2012 to 2015 she served as Department Chair. She received her Ph.D. in Biochemistry from the University of Rajshahi, Bangladesh in 2006. During 2001-2003, she worked as lab coordinator in swiss agency for development and cooperation, Embassy of Switzerland, Bangladesh. She is doing research with food safety and adulteration in Bangladesh. She has several research papers in this area. Her recent publication on study of a common azo food dye in mice model: Toxicity reports and its relation to Carcinogenicityl (2019) in WILEY e-journal of Food Science and Nutrition. She is a member of Asian Food Safety and Security Association (AFSA).

e: luthfunnesa.ftns@gmail.com
e: mslbari@hotmail.com

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