



বিএসটিআই'র গবেষণা প্রস্তাব

Sl. No. & Title	Description
1. Title of the Research	Development of an improved method in BSTI for analysis of Copper in Bakery products by Atomic Absorption Spectrophotometer(AAS)
2. Research Problem	In recent years, copper (Cu) enters in agricultural soils, due to arbitrary use of pesticides, fungicides, industrial effluent and wastewater irrigation now it is a major concern for sustainable food production especially in developing countries. Copper enters in food system from environment. There are few research work done in this topic. Therefore, it is necessary to develop an improve method to determine Copper in Bakery products accurately in the BSTI laboratory.
3. Justification	Copper toxicity is a type of metal poisoning caused by an excess of copper in the body. Acute symptoms of copper poisoning by ingestion include vomiting, hematemesis, hypotension, melena (black "tarry" feces), jaundice (yellowish pigmentation of the skin), and gastrointestinal distress. Bangladesh Food Safety Authority (BFSA) published a regulation regarding food contaminant in 2017. BFSA set the maximum limit of Copper for Bakery products. So it is very important to analyze Copper accurately in Bakery product.
4. Gap of Previous Research	Presently in BSTI Copper is not determined in Bakery product because it is not included in Bangladesh Standard Specification but there might be a chance of having Copper in Bakery products.
5. Audience	The Scientist, Laboratory analyst throughout the world will be the audience.
6. Questions	How BSTI can develop a method to be effective, easier, rapid and fit for purpose for analysis Copper in Bakery product?
7. Purpose	To develop an efficient method for analysis of Copper by AAS in BSTI Laboratory for Bakery products.
8. Title	Development of an improved method in BSTI for analysis of Copper in Bakery products by Atomic Absorption Spectrophotometer(AAS)
9. Methodology	Atomic absorption spectroscopy (AAS) is a spectroanalytical procedure for the quantitative determination of chemical elements using the absorption of optical radiation (light) by free atoms in the gaseous state. Atomic absorption spectroscopy is based on absorption of light by free metallic ions. The technique makes use of the atomic absorption spectrum of a sample in order to assess the concentration of specific analytes within it. It requires standards with known analyte content to establish the relation between the measured absorbance and the analyte concentration and relies therefore on the Beer-Lambert law. This validation is to prove that the method developed for the determination of Copper in Bakery product is suitable for its intended use "fit for purpose". Method Validation will be performed using Biscuit as a representative matrix.

10. Time Frame and Tentative Budget	<p>The project needs 06 (Six) months time depending on financial and logistic support. It requires approximately Taka 1,50,000/- (One lac and fifty thousand) for sample collection, procurement of following reagent, chemicals, Certified Reference Materials, Spares of AAS, sample preparation accessories etc.</p> <ul style="list-style-type: none"> a) Certified Reference Material of Copper- 40,000 (Forty Thousand only). b) Reagent and Chemical- 40,000 (Forty Thousand only). c) Consumables of AAS- 40,000 (Forty Thousand only). d) Contingency, Travel, Training, Stationary, etc. and others for research work tk. 30,000 (Thirty Thousand only). <p>This is a tentative budget. Expenditure for each category may increase or decrease at purchase time (with constant total budget) .</p>
11. Bibliography	Bibliography will be given at the end of research paper.

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