QUALITATIVE DETECTION OF ADULTERATION IN NON-LABELED CHILI AND TURMERIC POWDERS SOLD IN THE RETAIL MARKET IN THE MATARA CITY AREA

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Abstract: The adulteration of spices is a current global issue. This study was conducted to qualitatively detect the level of adulteration in non-labeled chili and turmeric powders sold in the retail market in Matara City, Sri Lanka. Physical and chemical analyses were carried out on 60 randomly collected samples (30 each of chili and turmeric powders). Each sample weighed 40-50 g. Texture, colour and odour of each sample were assessed physically, while specific adulterants such as starch, artificial colours, sawdust and maaetanil yellow were identified through chemical tests. Moisture content was analyzed using a moisture analyzer. Foreign particles and starch adulteration were detected via microscopic observations. Control samples were prepared to match the SLS requirements and used as standards to guarantee accurate comparisons. Results revealed that turmeric powder samples were significantly pure, with 93.3% free from hazardous contaminants such as yellow lead salts and aniline dye. A considerable proportion of turmeric powder samples (10%) contained metanil yellow and starch. Chili powder samples exhibited greater adulteration rates, with 43.3% displaying physical adulteration and 23.3% containing artificial colouring. These findings emphasize the requirement of strict regulatory measures and quality control procedures to assure consumer safety and maintain product integrity in the spice market.

Keywords: Food Safety, Adulterants, Chili Powder, Turmeric Powder, Qualitative Measures