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Investigation of domestic kitchen wastes as potential colouring agent for textile substrates

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This research study focuses on the dyeing of cellulosic (cotton) fabrics with aqueous extracts from two different domestic wastes. Two methods of dyeing (i.e. with mordanting and without mordanting) were carried out on cotton fabric. In this study extraction of brilliant brown and red colours from kitchen wastes are of particular interest. Colouring matter from used tea leaves (*Camelia sinensis*) and big onion (*Alium cepa*) skin were extracted and dyeing tests were performed. Colour strength, shade and fastness properties of the dyed textiles were investigated. The extracts were applied under optimum conditions with one synthetic mordant ($CuSO_4$) and two natural mordants Sepalika (*Nyctanthes arbor-tristis*) and Aralu (*Terminalia Chebula*). The results prove the potential of such wastes as a source for natural dye extraction. To obtain textile dyeing with acceptable fastness properties, however, rigorous selection of dyes and development of suitable processes are required.

When a commercial gamut of natural dyes is formed, the total capacity of available material can be expected to be sufficient to provide the textile market with natural dyes. While the shade of the dyeing obtained with the plant material is of considerable interest because brilliant brown and red shades can be obtained, careful selection of plant sources is necessary to achieve suitable fastness properties.

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