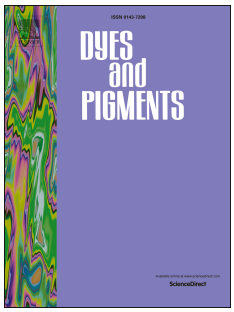
# Accepted Manuscript




UV protection from cotton fabrics dyed with different tea extracts

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# UV PROTECTION FROM COTTON FABRICS DYED WITH DIFFERENT TEA EXTRACTS.

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## ABSTRACT

Recently, natural dyes are becoming more important because they are considered environmentally friendly. However, the reduction in pollution is not only the main aspect that makes them interesting. New properties such antibacterial, sun protection, etc., can be added to the material dyed with them. In this work we consider different teas, the red one, the black and the green tea. Tea is commonly known all over the world ant they are considerably appreciated by their antioxidant properties. In this work the antioxidant effect of tea extracts has been determined and cotton fabrics were dyed. Previously, fabrics were treated with chitosan as a natural and not pollutant mordant. The effectiveness of dyeing cotton with tea extracts has been objectively studied by the K/S value and the chromatic values CIELab. Furthermore, the ultra violet (UV) protection has been determined as the Ultraviolet Protection Factor (UPF). Having dyed cotton with the tea extracts and analysing the results, no relationship was found between antioxidant effect and the dyeing yield nor the UPF. The same kind of tea offered fabrics with different colours depending on the extraction method. Some samples showed reddish hue and others a greenish one but it was not directly related to red or green tea. We could conclude that the final colour is more influenced by the way the extraction has been performed than by the kind of tea used. Regarding the UPF, it has been demonstrated that the effectiveness depends on the method used and the level of protection is considerably increased although there are two kinds of tea which show higher results.