ENHANCING FASTNESS AND ULTRAVIOLET PROTECTION FACTOR OF Pelthophorum pterocarpum NATURAL DYE BY TITANIA (TiO2) NANOPARTICLES MODIFICATION

by Kun Sri Budiasih, Cahyorini Kusumawardhani, Indira Khairunisa

ABSTRACT

The use of natural dye in textile will reduce the negative effect of synthetic dyes in human health and environment. However, textile dyeing with natural dyes has low brightness and colour resistance. TiO_2 nanoparticles modified copperpod ***(Pelthophorum pterocarpum)*** dye was studied to enhance the fastness and ultraviolet protection factor of fabrics dyeing. The research was conducted using a cotton fabrics which mordanted by some mordant agents. TiO_2 in various amount were dispersed in aqueous copperpod bark solution and produced a modified copperpod natural dye. Investigation of the dyed fabrics was conducted in 3 parameters : the colour direction, fastness values toward sunlight, and ultraviolet protection factor (UPF). The result showed that the mordant agents determined the colour direction and the resulting colours. TiO_2 lead to the enhancement of chroma and fastness value of copperpod dye. It also enhanced the ultraviolet protection factor (UPF) of dyed fabrics by 3-8 point higher than the control groups.

Kata Kunci: *fastness, natural dye, Pelthophorum pterocarpum, TiO2, UPF.*