

# Effect of dyeing on physical properties of rayon-silk blend fabric

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■ **ABSTRACT :** The study focus on effect of dyeing on physical properties of rayon-silk blend fabric. Commercially available Rayon-silk blended (70% rayon and 30% silk) fabric was procured from market. The fabric was scoured to prepare for dyeing. The scoured fabric was pretreated with 3 per cent (o.w.f.) alfix and dyed with *Kachnar* bark (*Bauhinia variegata*) dye using two synthetic and two natural mordants. Synthetic mordants used were: copper sulphate and potassium permanganate and natural mordants were Indian gooseberry and eucalyptus. The mordants were applied by post mordanting technique. The dyed samples were tested for their colour fastness against washing, rubbing, perspiration and sunlight. The dyed and mordanted samples were also evaluated visually for appearance and lustre. Physical properties in terms of fabric thickness, weight and count, flexural rigidity, crease recovery angle and tensile strength and elongation were studied using standard test methods. *Kachnar* dye gave a colour series of rosy brown colour on rayon-silk blend using different mordants and mordanting methods with varying concentration levels. There was little variation in colour values produced with natural mordants. It was concluded from the overall fastness grades that fastness properties enhanced after post mordanting method and colour adherence to fabric was good. From the experiment it was found that the *kachnar* dyed silk samples mordanted with different mordants when evaluated visually showed improvement in appearance over the control sample. Sample mordanted with potassium pomegranate got highest score for lustre and texture. Fabric thickness, weight, fabric count, flexural rigidity and crease recovery of all the dyed samples increased when compared with original sample. Drape co-efficient of unmordanted, copper sulphate and pomegranate mordanted samples had no change. While in case of potassium permanganate and eucalyptus mordanted samples it increased slightly. Tensile strength of all the samples increased in both the directions except unmordanted samples which decreased in weft direction. Elongation in warp direction of potassium permanganate and eucalyptus mordanted samples increased while that of copper sulphate and pomegranate mordanted samples decreased. In weft direction it increased in all other samples except that of potassium permanganate mordanted samples. Studying the effect of dyes on physical properties of fabrics is very important as end use of different fabrics depend on these properties.

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