COMPARATIVE ANALYSIS OF THE THERMAL COMFORT PROPERTIES OF KNITTED FABRICS MADE OF COTTON AND MODAL FIBRES

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ABSTRACT

In this study, thermal properties of pique fabrics knitted with cotton and modal yarns were investigated for sportswear. Cotton remains by far the most important natural fibre due to good water vapour and air permeability, and hygieinc properties and modal is a processed bio-based textile made from reconstituted cellulose from the beech tree. In many ways, modal acts like cotton, but it also has some significant advantages over cotton.The aim of this study was to produce knitted fabrics with better comfort properties by utilizing the excellent characteristics of these fibres. First, short staple yarns were spun having linear densities Ne 30/1, and Ne 40/1.Then, pique knitted fabrics were produced with different tightness factor with these yarns and the thermal comfort parameters of fabrics were measured on Laser Comp. model Fox 314. The results indicated that modal pique fabrics are considered preferred candidates for warmer climate sportswear, particularly due to their lower thermal resistance, higher thermal conductivity and higher air permeability.

KEYWORDS: Cotton, Modal, Pique, Thermal Conductivity and Resistance, Air Permeability