

COMPARISON OF MOISTURE MANAGEMENT PROPERTIES FOR MALAYSIAN GOVERNMENT UNIFORMS

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Abstract: This paper explores the impact of fabric materials and compositions on moisture management in government clothing, particularly focusing on comfort, which is vital for uniforms of enforcement agencies and military in Malaysia. By choosing the right materials, protective clothing can enhance wearer satisfaction and protection. We evaluated nine fabric types for their moisture management performance, which involved transporting moisture (such as sweat) away from the body for quick evaporation in order to maintain wearer comfort. Among these fabrics, sample K06 (100% polyester) proved to be the most comfortable, excelling in efficient moisture transport without causing discomfort. In contrast, sample K02 (60% cotton, 40% polyester) was the least comfortable due to bottom coating that traps sweat. If coated fabrics were excluded, sample K05 (70% cotton, 30% nylon) was the least comfortable due to its thickness. The study also highlighted that 100% polyester fabrics outperformed 100% cotton fabrics in moisture management. Furthermore, lower mass per unit area and increasing cotton composition in cotton-nylon blends improve overall moisture management properties. The classification of the nine fabric samples are recorded in Table 1.

Keywords: *Fabric comfort; moisture management properties; material composition; fabric mass; thickness.*

Table 1 Classification of fabric type

| Fabric | Type of Fabric |
|--------|--|
| K01 | Moisture Management Fabric |
| K02 | Water Proof Fabric |
| K03 | Water Proof Fabric |
| K04 | Moisture Management Fabric |
| K05 | Fast Absorbing and Quick Drying Fabric |
| K06 | Moisture Management Fabric |
| K07 | Moisture Management Fabric |
| K08 | Moisture Management Fabric |
| K09 | Moisture Management Fabric |

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