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Drying and Wicking Properties of Various Fabrics

This experiment tests the wicking and drying properties of three different fabrics as a measurement of the fabrics' effectiveness.

Fabric samples were cut from new, unwashed fitness shirts to a length of 20 cm by 3 cm, and each sample's dry weight was recorded. Wicking speed was measured using an apparatus that suspended the fabric sample horizontally, with hone end of the sample suspended in 100 ml of distilled water. A timer was started, and the time was recorded at each centimeter mark as the water progressed up the fabric sample by capillary action. Drying time was measured by removing the fabric sample from the wicking assembly, putting it on a scale, and weighting the sample every 30 minutes until the fabric returned to its original mass.

Three types of fabric were tested: polyester, cotton, and polypropylene. The wicking test revealed that polyester wicked water 3.16 times faster than cotton. The drying test revealed that polyester dried 2.18 times faster than cotton. Polypropylene did not wick any water, which made both tests of polypropylene impossible. Based on these findings, polyester was the most effective material for wicking and drying perspiration.

While millions of dollars do into research and development in textile companies to ensure that their fabric is the best, there seems to be a large disconnect between the research and the consumer. The significance of this experiment bridges that gap to give consumers a simple understanding of which fabric is the best and why.