

### Abstract

Quick dry function in inner wears is an important factor for determining their end usages. The quick dry function is related to the wicking behaviour of the fabric. Three commercially available products serving three product areas: Brand A: online brand; Brand B: general market and Brand C: youth market were obtained from the market. The products are inner wears for women. Their vertical and horizontal wicking properties were examined by international standards. Experiment results revealed that Brand C products had satisfactory wicking ability as they claimed, whereas Brand A showed no quick dry property.

**Keywords:** inner wear, fabric, quick dry, vertical wicking, horizontal wicking

### Content:

Hong Kong features a tropical monsoon climate, and the weather is very humid and rainy with a relatively high temperature. The humid weather usually causes the fabric harder to dry. The wet fabric traps the moisture or sweat on the skin and affects the comfortability, especially for the non-breathable fabric, which may increase the risk of infection and hyperthermia. Moisture movement is closely related to the thermal-psychological comfort, which can control the heat transfer since moisture is a good conductor for heat. Therefore, the quick dry property for women's inner wear is very important, which can be evaluated by the wicking ability.

Nowadays, there are quite a lot of quick dry inner wears available on the market. The present study aims to investigate the quick dry performance of such products in Hong Kong market by comparing the wickability of three common commercial inner wears in different market positions: Brand A: online brand; Brand B: general market and Brand C: youth market.

For vertical wicking, based on the experimental results, Brand C samples have the highest vertical wicking rates, both in warp and weft directions (27.62 and 33.94 mm/s, respectively). A sharp decrease in the vertical wicking rate is observed for the Brand B samples, only 2.03 mm/s in the warp direction and 0.15 mm/s in the weft direction. However, the samples for Brand A fails to show any vertical wicking property, amazingly. Hence it is found that Brand A sample has the worst vertical wicking ability among three brands, while Brand C is the optimum sample with the best vertical wicking.

For horizontal wicking, based on experimental

results, the wicking rate of Brand C sample is significantly higher than the other two brands, which means the optimal ability of the fabric to remove moisture. The value of wicking rate for Brand C sample is 766.7 mm<sup>2</sup>/s, while this figure for Brand B is 10.02 mm<sup>2</sup>/s. Similarly, Brand C sample shows the lowest horizontal wicking rate, being only 2.8 mm<sup>2</sup>/s.

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