

Physico-chemical characteristics of watermelon in Malaysia

ABSTRACT

Watermelon (*Citrullus lanatus*) is a popular fruit among Malaysians. Red-fleshed seeded and seedless, and yellow-fleshed watermelons are mostly selected as a dessert and available throughout the year in local markets. Therefore, this study was focused to determine the nutritional and physico-chemical characteristics of these watermelons. Red-fleshed seedless watermelon contained $89.7 \pm 4.3\%$ moisture, while red-fleshed seeded and yellow-fleshed watermelon had $87.5 \pm 2.6\%$ and $87.0 \pm 2.7\%$ respectively. No significant differences were observed for most nutritional and physico-chemical analysis between samples. However, there were significant differences for colour determination (L^* , a^* and b^*) and amount of sucrose among the samples. Yellow-fleshed watermelon showed $L^* = 50.0 \pm 6.9$, $a^* = 5.8 \pm 2.0$, $b^* = 32.6 \pm 8.8$, red-fleshed seedless showed $L^* = 43.4 \pm 3.5$, $a^* = 25.1 \pm 4.4$, $b^* = 15.2 \pm 4.1$ and red-fleshed seeded showed $L^* = 38.2 \pm 5.1$, $a^* = 19.4 \pm 7.3$, $b^* = 15.3 \pm 6.6$. Total sugar contents determined by high performance liquid chromatography (HPLC) showed that red-fleshed seedless, red-fleshed seeded and yellow-fleshed watermelon consisted of glucose, fructose and sucrose. Amount of total sugar for red-fleshed seedless, red-fleshed seeded and yellow-fleshed watermelon were 95.0 ± 25.2 mg/g, 113.8 ± 31.6 mg/g and 100.6 ± 25.5 mg/g respectively. There was positive and strong correlation between total soluble solid with total sugar ($r^2 = 0.75$). The results indicated that different varieties of watermelon had different nutritional contents and physico-chemical characteristics.

Keyword: Nutritional analysis; Physico-chemical; Red-fleshed watermelon; Yellow-fleshed watermelon