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Identification of different coconut cultivars for beverage purposes

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Tender nuts (seven and eight months after pollination) of 10 selected coconut cultivars, *viz*. *Dwarf Green (DG), Dwarf Yellow (DY), Dwarf Red (DR), Dwarf Brown (DB), Cameroon Red Dwarf (CRD), King Coconut (KC), Bodiri (BD), Murusi (MU), Bothal Thembili (BT)* and *Juvan (JU)* were collected from Lunuwila, Pallama and Galle area.

Nut water samples (six nut water samples from each cultivar) were diluted 100 times, purified using Sep-pak cartridge and analysed for sugars (Glucose, Fructose and Sucrose) using a high performance liquid chromatography (HPLC) system (Waters, USA) with a sugar-pak column. Contents of K^+ Na^+, Ca^{++} and Mg^{++} were determined using an Atomic Absorption Spectrometer (GBC, Australia).

According to the analysis of sugar profiles, seven-month old nuts of *BD* showed significantly higher sucrose (2-fold, $P < 0.001$) and invert sugar (glucose and fructose; approx. 50%) contents compared to the mean of all cultivars (Fig. 1 a, c & e). This resulted in a 50% higher total sugar content in seven-month old nuts of *BD*. Similarly, eight-month old nuts of *BD* contained 3-fold higher sucrose content and about 30% higher invert sugars resulting in an increase of total sugars by 40% compared to the mean of all cultivars (Fig. 1 b, d & f). Thus one-fold increase of sucrose content and about 20% decrease of invert sugar content were observed from 7 - 8 month period. *BT* showed the lowest sucrose, invert and total sugar contents out of the tested cultivars. No significant differences were observed among other cultivars with respect to above parameters in both developmental stages.

BD also contained about 45% and 55% higher K^+ contents respectively in nut water of 7 and 8 month-old nuts compared to the mean of all cultivars (Fig. 2 a & b). However, it contained significantly low ($P < 0.01$) Na^+ and average contents of Mg^{++} and Ca^{++} in both developmental stages (Fig. 2 c & d). Cultivars *JU*, *DG* and *DB* also contained higher levels of K^+ in both 7 and 8 month old nuts. Although the Na^+, Mg^{++} and Ca^{++} levels of *JU* and *DB* were approximately similar to those of the rest, *DG* showed significantly higher (3-fold) Mg^{++} content in both developmental stages. *DR* also showed an increase of Mg^{++} similar to that of *DG*.

Accordingly, *BD* appeared more suitable as a beverage with higher content of sugars (both sucrose and invert) and K^+ of which sucrose and K^+ prominently contributing for its taste.

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