

Title Harvesting and postharvest handling practices and characteristics of *Uapaca kirkiana* (Muell. Arg.) fruits: a survey of roadside markets in Malawi

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Abstract

Uapaca kirkiana (Muell. Arg.), a highly valued indigenous fruit species, is being domesticated to increase its utilization in southern Africa. Vendors, who were also the fruit gatherers, that were selling *U. kirkiana* fruits at roadside markets in Dedza, Malawi, were interviewed on four occasions during the marketing season (October 2003–January 2004) and fruit samples were concurrently sampled from each vendor. Information was obtained on when and how the fruits had been harvested and handled. Timing of fruit harvest was based on experience, aided by indicators such as occurrence of first heavy rains, natural abscission, size and color changes. Harvesting by knocking down unripe fruits from trees was practiced throughout the season, but naturally abscised fruits were also gathered in December and January. Fruits harvested when mature but unripe required incubation in soil, plain and woven plastic bags or clay-pots. The incubation method changed and the duration of incubation decreased between October (3–4 days) and January (≤ 2 days). Fruit samples were evaluated for damage, color and soluble solids concentration (SSC). Fruit SSC and color lightness/brightness (L^*) increased from 10.1 to 16.4% ($P < 0.01$) and from 45.7 to 50.5 units, ($P < 0.01$), respectively. Higher SSC values were generally associated ($R^2 = 0.68$, $P < 0.001$) with increasing pulp color intensity. Cracking, at 48%, constituted the most common form of damage in sampled fruits. On average, fruits were saleable for only 3–4 days, this being attributed to inherent fruit characteristics combined with immaturity at harvest, and damage during harvesting and storage in hot dry conditions. Lack of appropriate harvesting and handling techniques were associated with fruit darkening, drying, rotting and other postharvest problems.