

Title Quality of Fresh-Cut Galangal Harvested at Different Maturity Stages
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Abstract

Galangal ('Kha Tar Daeng', *Alpinia nigra* [Gaerth.] B. L. Burt., Zingiberaceae) rhizome (including aerial pseudostem) were harvested for fresh-cut product at 3 maturity stages (1, 3 and 5-leaf) between April and May (dry season) and July and August 2004 (rainy season) to determine the optimum maturity stage and storage temperature. One-leaf galangal rhizome harvested in dry season showed less weight, size (height and circumference) of aerial pseudostem and rhizome circumference ($P<0.05$), except for rhizome diameter, than 3 and 5-leaf stage. Similarly, the 1-leaf rhizome harvested during the rainy season exhibited less weight and size (height and circumference) of aerial pseudostem ($P<0.05$), but presented a similar rhizome size (circumference and diameter). Fresh-cut galangal prepared from 1-leaf rhizome harvested in dry season showed similar firmness (8.9 N in average), lower crude fiber (14.3%), but had higher dry matter (8.6%) and total antioxidant activity (65.3 mM ascorbic acid equivalent / 100 g fresh weight) than that prepared from 3-leaf stage. During the rainy season, fresh-cut galangal prepared from 1-leaf rhizome had lower firmness (7.1 N) and crude fiber (15.8%), similar quantity of dry matter (7.5% in average), but had higher total antioxidant activity (46.3 mM ascorbic acid equivalent / 100 g fresh weight). At 5 °C storage, fresh-cut galangal prepared from the rhizome harvested in both seasons showed less browning, as indicated by normalized L^* value and visual rating score, and consequently a longer (2.1 days, overall mean) storage life, than that stored at 10, 15 and 25 °C. Fresh-cut galangal prepared from the rhizome harvested in dry season lost greater weight (4.7%) and exhibited a shorter storage life (1.3 days), as determined by the number of days that the rhizome quality score decreased to 4.0, than that harvested during the rainy season. Storage life at 5 °C of the fresh-cut galangal prepared from 1-leaf rhizome harvested in dry season was 1.7 days, compared to 1.6 and 0.9 days of those prepared from 3 and 5-leaf shoots, respectively, while the storage life of the fresh-cut product prepared from 1, 3 and 5-leaf rhizome harvested during the rainy season was 4.1, 3.1 and 3.2 days, respectively.