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Development of novel functional foods from guava (*Psidium guajava*) and veralu (*Elaeocarpus serratus*) fruits

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Abstract

Guava (*Psidium guajava*) and veralu (*Elaeocarpus serratus*) are highly perishable fruits and are known to be rich sources of vitamins and show several important pharmacological activities. Specially veralu is an underutilized fruit, therefore consumption in the community is less. Moreover, there is post-harvest loss from guava fruits due to their highly perishability. Transforming them into functional foods with keeping their original properties will make them easily accessible throughout the year and provide nutritional and health benefits. Therefore, this study was focused on developing novel functional foods such as fruit-incorporated cereal bars from guava and veralu fruits and wine from veralu. Four formulations for cereal bars were formulated incorporating, dehydrated guava with dehydrated veralu in the ratio of 1:1 and 3:1 (C1 and C2), osmotically dehydrated guava (C3) and control (C4). The functional properties, such as proximate, antioxidant activity and physiochemical properties, were tested for those prepared products. The quality evaluation of the prepared fruit-incorporated cereal bars showed 12% of protein content, 8 % of fat, a range of 8-13% of ash and 5% of moisture content. The highest vitamin C (545.07 ± 3.46 mg/100 g) content was noted in the C3 formulation than the others. The acidity index was about 0.7%. Total phenolic and flavonoid content were recorded in the range of (60-100) mg /100g gallic acid equivalents and (10-20) mg/100 g quercetin equivalents, respectively. The sensory evaluation of C2 formulation was recorded as the highest mean score. The quality evaluation of the prepared wine showed (2.95± 0.02) of pH, (7.11 ± 0.03) g/L in tartaric acid equivalents of titratable-acidity, (2.49 ± 0.01) mg/mL of vitamin C and 11.44% ethanol content. Antioxidant properties of the wine were evaluated using 2,2-Diphenyl-1-picrylhydrazyl (DPPH) assay and the IC_{50} in DPPH assay was 0.707 mg/mL. In conclusion, fruit-incorporated cereal bars and veralu wine can be served as functional foods providing health benefits and good nutritional value to the consumers, thus suitable for commercialization.

Keywords: Cereal bar, *E. serratus*, Functional food, *P. guajava*, Wine

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