

## Development and quality evaluation of antioxidant rich star fruit beverages (*Averrhoa carambola*)

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Consumption of various types of fruit provides excellent health benefits because they are good source of phytochemicals and prevent many diseases. The protective action of fruits and vegetables has been attributed to the presence of antioxidants. In this view of above, the present study had been planned with the objectives to develop and assess the nutritional, antioxidant and shelf-life properties of antioxidant rich healthy beverages formulated using star fruit. Moisture, crude protein, crude fat, total ash and carbohydrate content present in *Squash* was  $48.71 \pm 0.19$  g,  $0.2 \pm 0.01$  g,  $0.17 \pm 0.005$  g,  $50.87 \pm 0.20$  g per 100 g, respectively. Crude fibre was not present in *Squash*. The energy value was  $204.63 \pm 0.77$  kcal per 100 g. Developed *Squash* had contained  $19.17 \pm 0.21$  mg calcium,  $0.05 \pm 0.01$  mg potassium and  $1.27 \pm 0.04$  mg magnesium per 100 g. In this sequence, proximate composition of *Cordial* was; moisture  $54.03 \pm 0.02$  g, total ash  $0.15 \pm 0.01$  g, carbohydrate  $45.82 \pm 0.01$  g and energy  $183.28 \pm 0.06$  kcal per 100 g. Crude protein, crude fat and crude fibre was detected in *Cordial*. Mineral content in *Cordial* which includes calcium, potassium and magnesium was  $0.05 \pm 0.005$  mg,  $0.05 \pm 0.01$  mg and  $0.02 \pm 0.005$  mg per 100 g, respectively. The total antioxidant activity, total phenolic content and ascorbic acid present in *Squash* was  $70.91 \pm 0.38$  %,  $261.71 \pm 0.49$  and  $2.09 \pm 0.19$  mg per 100, g respectively. Total antioxidant capacity in *Cordial* was  $67.82 \pm 0.26$  %. The total phenolic content and ascorbic acid value of *Cordial* was  $244.03 \pm 0.49$  and  $1.46 \pm 0.14$  mg per 100 g, respectively. The organoleptic scores for *Squash* and *Cordial* during storage were slightly decreases during the storage period (0<sup>th</sup> to 90<sup>th</sup> days) but the scores were between “liked moderately” to “liked very much”. The effect of storage on total antioxidant capacity of *Squash* and *Cordial* revealed that during the storage period the total antioxidant activity was decreases, but it was in the range from  $70.91 \pm 0.38$ % to  $64.65 \pm 0.11$  % for *Squash* and  $67.82 \pm 0.26$ % to  $60.26 \pm 0.15$ % for *Cordial*. So, it was concluded that developed *Squash* and *Cordial* were found highly acceptable when they were developed using Star Fruits.

**Key Words :** Star fruit, Phy- tochemicals, Antioxidant, Phenolic compound, Vitamin C, Shelf-life, Organoleptic evaluation

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