Preparation and organoleptic evaluation of banana pseudostem candy

Abstract

Along with the growth and processing of banana fruit, a considerable amount of biomass (pseudostem, bloom, leaves, and suckers) is also produced. The extra biomass is left in the field after bunches are harvested and is either burned, dumped into lakes and rivers or just left on the bunds. This harms the ecology and the wellbeing of living things by contaminating nearby water supplies and the air. The findings of this study suggest that blanching banana pseudostem candy and flavouring it with pine apple may significantly improve the organoleptic ratings for its colour and look, texture, taste and flavour, and general acceptability. The findings revealed that the most consumer-acceptable banana pseudostem candy was made by steam blanching banana cubes for 2.5 minutes, steeping them in 40–60° Brix syrup, and flavouring them with pineapple.

Keywords – Banana, Flavour, pseudostem

Introduction

The banana (Musa spp.) is a kind of tropical fruit and one of the most important tropical fruit crops in the world. It is said to have been among the most significant fruit crops grown by humans at the dawn of civilization. Producers and consumers in the area enjoy the native variation known as the AAB group cultivar. Along with the growth and processing of banana fruit, a considerable amount of biomass (pseudostem, bloom, leaves, and suckers) is also produced. The extra biomass is left in the field after bunches are harvested and is either burned, dumped into lakes and rivers or just left on the bunds. This harms the ecology and the wellbeing of living things by contaminating nearby water supplies and the air. As a necessary

result, turning these unwanted banana pseudostem into value-added goods might have a substantial positive impact on the environment and raise their economic value. The use of such pseudostems creates wealth in the form of food, health, value-added commodities, extra money, and work opportunities in addition to aiding in trash disposal. The central core of the pseudostem is perfectly suited for the production of the osmotically dehydrated candy due to its porous structure and quick absorption of the osmotic solution. Numerous benefits of osmotic dehydration include avoiding heat-related colour and flavour loss, inhibiting browning enzymes, and reducing energy expenditures. Osmotic dehydration also resulted in a prolonged shelf life and little fragrance loss in dried and semi-dried items (Khan, 2012). In order to standardise the process for creating banana pseudostem candy and to carry out its organoleptic evaluation, the current study was conducted after taking all of the relevant elements into account.

Material and methods

Immediately following the bunch's harvest from the field, the pseudostems of healthy, unharmed bananas were gathered. To get rid of the dirt and soil sticking to the banana pseudostems, they were thoroughly cleaned with tap water. A razor-sharp stainless steel knife was used to separate the pseudostems, and the cores were then removed and thoroughly cleaned. The cores were divided into wheels by cutting them horizontally, and the fibrous outer skin was removed with a stainless steel knife before being weighed on an electronic scale. These core wheels were immediately submerged in 0.2% potassium meta bi-sulphate for an hour to prevent browning, afterwards removed and blanched for 2.5 minutes in accordance with procedures, and then immediately submerged in cold water to prevent overcooking. When utilising a pressure cooker to perform a steam blanching procedure, cubes were blanched with

steam for 2.5 minutes before being cooled to room temperature.Blanched pseudostem core wheels were punctured, added citric acid (1%), then steeped in sugar syrup (40oB). Core wheels were removed from the syrup after 24 hours of steeping, and after boiling the syrup and adding sugar, the degree Brix of the sugar syrup was elevated to 50oB. The core wheels were submerged once more in the syrup for another 24 hours after cooling. The same procedure was carried out again the next day, raising the sugar syrup's Brix level to 60oB before adding pineapple taste (1%) and letting it sit for 24 hours. The wheels were then removed from the sugar syrup using a sieve, and the undesirable sections were chopped into small cubes both horizontally and vertically to create the appropriate form.

Results and Discussion

Any product must undergo organoleptic assessment in order to determine whether consumers would find it acceptable and to gain a deeper understanding of the product so that it may be improved. Organoleptic analysis is a scientific technique that offers unbiased data on how consumers perceive items. Beyond legal constraints or general safety and quality concerns, it may be used to evaluate food and beverages, recording insights using human senses and statistical analysis. The use of sensory analysis in food testing is becoming more and more common. It is becoming more and more recognised as essential for assisting in ensuring the quality and commercial success of food items. Throughout 90 days of ambient storage, the banana pseudostem candy underwent initial and monthly organoleptic evaluations. For each of the organoleptic characteristics, a substantial difference in scores was noted (Table 1).

Table 1: The impact of various treatments and storage times on the banana pseudostem candy's flavour, flavour, and overall acceptability (out of a possible 9.00).

Treatments	Flavour and taste				Generally acceptable			
	Days following storage							
	Initial	30	60	90	Initial	30	60	90
T1	6.12	6.03	5.81	5.61	6.29	6.02	5.95	5.82
T2	7.10	6.91	6.82	6.74	7.81	7.71	7.61	7.62
T3	7.31	7.24	7.13	7.05	8.02	7.92	7.83	7.78
T4	6.62	6.52	6.32	6.12	6.42	6.23	6.12	6.05
T5	8.24	8.16	7.91	7.81	8.23	8.12	8.02	7.92
T6	8.31	8.28	8.20	8.12	8.41	8.33	8.25	8.10

T1: Without blanching + steeping in 40-60ºBrix syrup

T2: Blanching for 2.5 min. + steeping in 40-60ºBrix syrup

T3: Steam Blanching for 2.5 min. + steeping in 40-60ºBrix syrup

T4: Without blanching + steeping in 40-60ºBrix syrup + pineapple flavour

T5: Blanching for 2.5 min. + steeping in 40-60ºBrix syrup + pineapple flavour

T6: Steam Blanching for 2.5 min. + steeping in 40-60ºBrix syrup + pineapple flavour

As storage proceeded, all of the organoleptic metrics' scores eventually fell. After 90 days of storage, a declining trend in the mean ratings for colour and appearance may be seen. Similar declining trends in the organoleptic scores were observed in osmotically dehydrated papaya cubes (Ankita et al., 2014), osmotically dehydrated strawberries (Khan et al., 2014), osmotically dehydrated wild pear slices (Devi, 2014), dried carrot slices (Sra et al., 2014), and pumpkin candy (Muzzaffar, 2006).

Conclusion

According to the results of this study, blanching banana pseudostem candy and adding pine apple flavour might greatly increase the organoleptic ratings for its colour and appearance, texture, taste and flavour, and overall acceptance. The results showed that steam blanching banana cubes for 2.5 minutes and steeping them in 40–60° Brix syrup with the addition of pineapple flavour produced the banana pseudostem candy with the greatest degree of consumer acceptability.

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