

Sensory Attributes and Preliminary Characterization of Milk Chocolate Bar Infused with Apricot Kernel Oil

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INTRODUCTION & AIM

Chocolate is the most popular confectionery product globally, primarily due to the bioactive compounds in cocoa (*Theobroma cacao* L.), which are believed to provide significant health benefits. Research continues to improve milk chocolate's quality and functionality, focusing on the bioactive compounds in cocoa and their role in disease prevention. Enhancing chocolate with functional materials from other plants, such as dried fruits, has been shown to improve both sensory characteristics and bioactive compound content. Apricot kernels and their oil exhibit notable physico-chemical properties and health benefits. The kernels, derived from the stones of apricots, yield a significant amount of oil, ranging from 45.6-46.3% crude oil. This oil is characterized by a high content of unsaturated fatty acids, particularly oleic acid and linoleic acid, making it nutritionally valuable and suitable for dietary purposes. The integration of apricot kernel oil (rich in unsaturated fatty acids and antioxidants) aims to enhance the nutritional profile and sensory attributes of chocolate.

METHOD

Procurement of Raw Materials

Cocoa liquor, cocoa butter, full cream milk powder, sugar, lecithin, and apricot kernels were sourced locally.

Apricot Kernel Oil Extraction

Oil was extracted using mechanical decortication followed by pressing and filtering.

Chocolate Preparation

Chocolate was formulated using a mixture of cocoa liquor, cocoa butter, milk powder, sugar, lecithin, soda, and vanilla.

	Treatment		
	A1	A2	A3
Apricot Kernal Oil	5%	10%	15%

Analysis

Sensory Evaluation, Color, Moisture, Texture and Antioxidant activity of the product were evaluated.

RESULTS & DISCUSSION

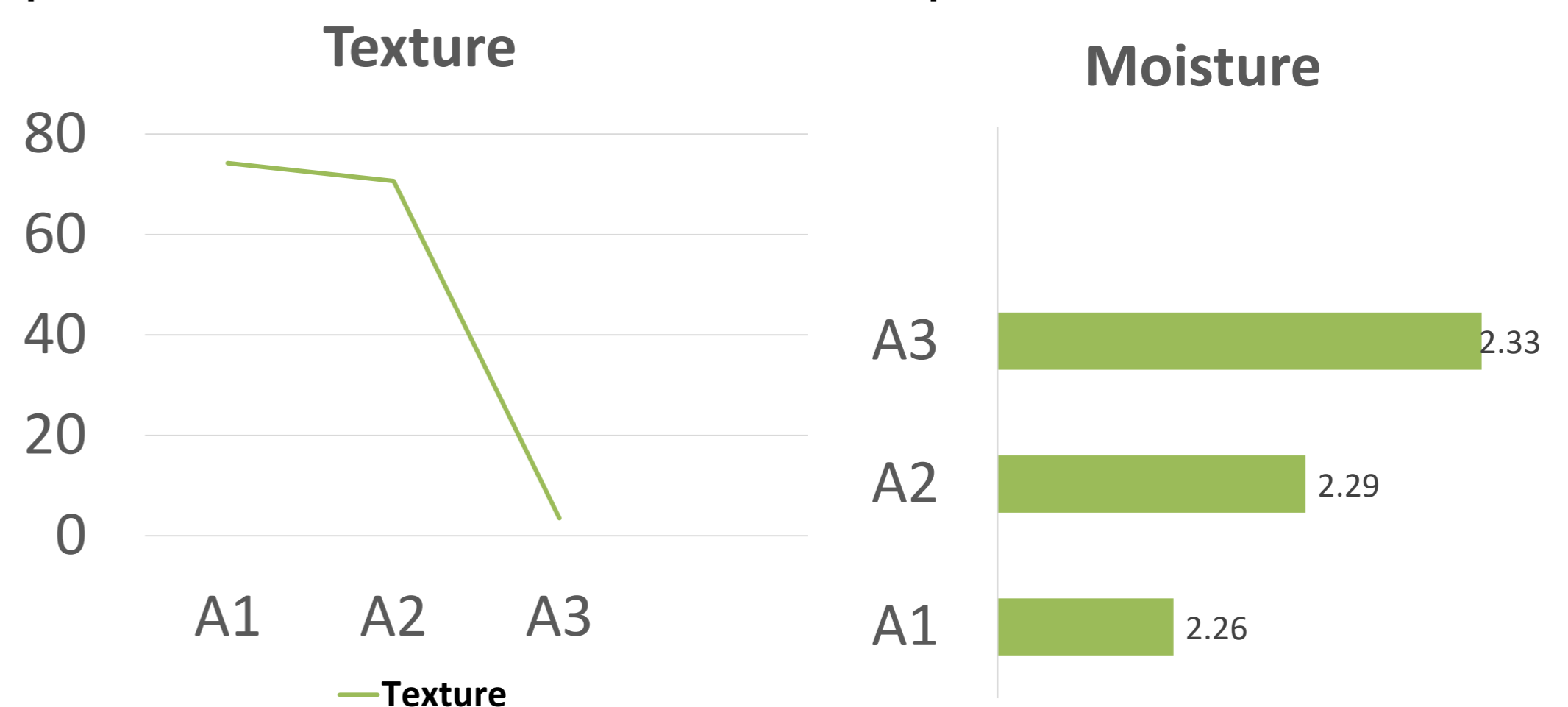
Sensory Evaluation

The highest preference was for the chocolate containing 5% apricot kernel oil (A1), which received higher scores for aroma, taste, and overall acceptability. Higher concentrations (A2: 10%, A3: 15%) were less favored due to bitterness.

Parameter	A1 (5%)	A2 (10%)	A3 (15%)
Color	4.48 ± 0.24	4.58 ± 0.16	4.51 ± 0.49
Aroma	3.88 ± 0.76	3.12 ± 0.97	3.10 ± 0.82
Taste	3.93 ± 0.13	2.98 ± 0.65	2.91 ± 0.82
Overall Acceptability	4.12 ± 0.77	3.14 ± 0.67	3.09 ± 0.91

Color and Texture

Minimal changes in color were observed with increased oil concentrations. A1 had the best texture (hardness) profile due to a balanced oil composition.



Moisture and Antioxidant Activity

A1 showed improved moisture content and higher antioxidant activity compared to other samples, providing potential health benefits.

CONCLUSION

The addition of 5% apricot kernel oil significantly enhanced the sensory and physical attributes of milk chocolate, making it a promising option for creating a novel chocolate product with health benefits.

FUTURE WORK / REFERENCES

Further studies can explore the long-term stability, shelf life, and consumer market acceptance of apricot kernel oil-infused chocolates. IImi, A., D. Praseptianga and D. Muhammad. Sensory attributes and preliminary characterization of milk chocolate bar enriched with cinnamon essential oil. IOP conference series: Materials science and engineering, 2017. IOP Publishing, 012031.