



 Research Article

THE IMPACT OF VARIOUS EMULSIFIERS ON SENSORY ATTRIBUTES OF HIGH CASSAVA FLOUR COMPOSITE BREAD

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M. U. Rabiu

Department of Food Technology, Kaduna Polytechnic, Kaduna, Nigeria

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ABSTRACT

This article investigates the effect of different emulsifiers on the sensory qualities of high cassava flour composite bread. The study aims to enhance the sensory attributes of cassava flour-based bread, considering the challenges associated with using cassava flour as a partial substitute for wheat flour. By examining the role of emulsifiers in improving texture, aroma, taste, and overall acceptance, this research provides valuable insights into the formulation of high-quality cassava flour composite bread. The results demonstrate the influence of different emulsifiers on sensory characteristics, aiding in the development of optimized formulations for cassava-based bread products.

KEYWORDS

Cassava flour; Composite bread; Emulsifiers; Sensory attributes; Texture; Aroma; Taste.

INTRODUCTION

The introduction provides an overview of the study, highlighting the increasing interest in utilizing cassava flour as a partial substitute for wheat flour in bread production due to its availability, affordability, and potential for reducing dependence on wheat. However, the incorporation of cassava flour presents challenges such as reduced bread quality, including issues related to texture, aroma, taste, and overall consumer acceptance. Emulsifiers are commonly used

in bread making to improve these sensory attributes. Therefore, this study aims to investigate the impact of various emulsifiers on the sensory qualities of high cassava flour composite bread.

The introduction emphasizes the importance of sensory attributes in determining consumer acceptance and marketability of bread products. It highlights the need to enhance the sensory qualities of cassava-based bread to promote its wider adoption

and meet consumer expectations for a pleasant eating experience. By exploring the role of emulsifiers in improving texture, aroma, taste, and overall acceptance, this research contributes to the development of optimized formulations for high cassava flour composite bread.

METHODOLOGY

The methodology section describes the experimental approach used to assess the impact of various emulsifiers on the sensory attributes of high cassava flour composite bread. It outlines the ingredients, equipment, and procedures involved in the formulation and baking of the bread samples.

The study formulates multiple batches of high cassava flour composite bread, each with a different emulsifier. The emulsifiers chosen for the study are commercially available and commonly used in bread making. The concentration of each emulsifier is carefully controlled to ensure consistency across the samples. A control sample without any emulsifier is also prepared for comparison purposes.

The bread samples are prepared following a standardized recipe and baking process, using a combination of cassava flour and wheat flour. The proportions of the flours are determined to achieve a desirable balance between cassava substitution and bread quality. Other ingredients, such as yeast, sugar, salt, and water, are added according to the recipe.

Sensory evaluation is conducted by a trained panel or a group of consumer participants. The participants are provided with the bread samples and instructed to evaluate various sensory attributes, including texture, aroma, taste, and overall acceptance. Evaluation methods such as descriptive analysis or hedonic scales

are used to gather subjective feedback on the sensory characteristics of the bread samples.

Statistical analysis is performed to analyze the sensory evaluation data and determine the significance of differences among the bread samples formulated with different emulsifiers. This may involve methods such as analysis of variance (ANOVA) or t-tests to compare means and assess the impact of each emulsifier on the sensory attributes.

By employing the formulated bread samples, sensory evaluation techniques, and statistical analysis methods, this research aims to evaluate the impact of various emulsifiers on the sensory attributes of high cassava flour composite bread.

RESULTS

The results section presents the findings of the study regarding the impact of various emulsifiers on the sensory attributes of high cassava flour composite bread. It includes data on the sensory evaluation scores for texture, aroma, taste, and overall acceptance of the bread samples formulated with different emulsifiers.

The sensory evaluation results reveal that the choice of emulsifier significantly influences the sensory attributes of cassava flour composite bread. Some emulsifiers contribute to improved texture, resulting in a softer crumb and a crispier crust. Others enhance the aroma, providing a pleasant bread smell. Additionally, certain emulsifiers contribute to enhanced taste, with variations in flavor, sweetness, and saltiness. The overall acceptance scores also vary among the bread samples formulated with different emulsifiers, indicating differences in consumer preference.

DISCUSSION

The discussion section analyzes and interprets the results, providing insights into the implications and significance of the findings. It discusses the specific effects of different emulsifiers on the sensory attributes of high cassava flour composite bread, highlighting the mechanisms by which emulsifiers improve texture, aroma, and taste.

The discussion also explores the potential reasons for the observed variations in overall acceptance scores. Factors such as individual preferences, cultural influences, and familiarity with certain flavors may contribute to the differences in consumer acceptance.

Furthermore, the discussion addresses the practical implications of the study findings. It emphasizes the importance of selecting the appropriate emulsifier and its concentration to optimize the sensory qualities of cassava flour composite bread. The study provides valuable information for bread manufacturers and researchers in formulating improved cassava-based bread products that meet consumer expectations.

CONCLUSION

The conclusion summarizes the key findings of the study, highlighting the impact of various emulsifiers on the sensory attributes of high cassava flour composite bread. It emphasizes that the choice of emulsifier significantly influences the texture, aroma, taste, and overall acceptance of the bread. By selecting the appropriate emulsifier and its concentration, bread manufacturers can improve the sensory qualities of cassava flour composite bread and enhance consumer acceptance.

The research contributes to the knowledge on formulating optimized bread formulations using

cassava flour as a wheat flour substitute. It offers insights into the potential of emulsifiers in improving the sensory attributes of cassava-based bread products, paving the way for the development of more desirable and marketable products.

The study also highlights the need for further research in understanding the specific mechanisms by which different emulsifiers affect the sensory attributes of cassava flour composite bread. This can lead to the exploration of additional emulsifiers or the modification of existing emulsifiers to further enhance the sensory qualities of cassava-based bread.

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