**Influence of banana peel flour on the fermentation process of bread: follow-up of practice in a domestic environment.**

Oliveira MC (1), Silva Neto PA (2), Melo Freitas JV (1), Silva MS (1), Milhome Liberato MA (1)

(1) Instituto Federal de Educação Ciência e Tecnologia do Ceará, Limoeiro do Norte, Ceará, Brazil.

(2) Instituto Federal de Educação Ciência e Tecnologia do Ceará, Fortaleza, Ceará, Brazil.

Dirección de e-mail: [magnoliacarneirooliveira@gmail.com](mailto:magnoliacarneirooliveira@gmail.com); [pabreunt@gmail.com](mailto:pabreunt@gmail.com); [vitormelofreitas01@gmail.com](mailto:vitormelofreitas01@gmail.com); [silvams@ifce.edu.br](mailto:silvams@ifce.edu.br); maria.milhome@ifce.edu.br

ABSTRACT

Banana (*Musa spp.*) is one of the most consumed tropical fruits in the world, and Brazil is one of the largest producers of this fruit. The peel is the banana’s main by-product, representing 40% of the total fruit. For a long time, the residue generated in the processing of bananas had no useful applications, however, the use of unconventional parts of the banana and its consequent transformation into flour is a relevant alternative for minimizing post-harvest losses and adding value to the formulated product. One of the applications of flour is its use in the development of bakery products as a partial replacement for wheat flour. Thus, the present work aimed to follow the fermentation process, in a domestic environment, of bread added with banana peel flour in partial replacement of wheat flour and to evaluate the influence of this residue on the fermentation process and on the physical and sensory characteristics of the elaborated product. For the preparation of bread added with banana peel flour, a proportion of 10% of flour was used, replacing wheat flour. A basic formulation (standard) for control was elaborated without the addition of banana peel flour for later comparison. The monitoring of the fermentation of the bread took place at room temperature (30-35 °C) and all the steps took place in a domestic environment, with the evaluation of the quality of the bread made from parameters such as weight, volume, and aroma, which took place at every 30 minutes in 4 fermentation times: 0min, 30min, 60min, 90min and 120min. In view of the results obtained, the bread made with banana peel flour resulted in darker products with little malleability, which partially hampered the fermentation process and the formation of the gluten network. There was also a reduction in the volume of the dough, but it presented itself as a product with a crunchy crust, soft crumb, and slightly astringent flavor/aroma, not differing much from the product made without the addition of banana flour. These results suggest the feasibility of applying this raw material to bread, which can increase the nutritional value of this traditional and widely consumed food. It was concluded that the addition of 10% of banana peel flour is recommended, considering that it did not prevent the growth of the dough, which lasted 30 min. For further research, nutritional characterization and sensory acceptance testing are recommended, so that the product can be suggested to bakeries.

Keywords:Musa sp., Astringent, Fermentation process, Residue, Added value.