TITLE: MICROBIOLOGICAL STABILITY OF BREADS WITH SUBSTITUTION OF WHEAT FLOUR FOR DEFATTED ORANGE-POMACE FLOUR AND ADDED POLYDEXTROSE

AUTHORS: NASCIMENTO, L. S.; SILVA, G. G.C.; SANCHES, Y.B.P.; PIMENTEL, T.C.; SILVA, A.F.; MARCOLINO, V.A.; BARÃO, C.E.; PINHEIRO, K.H.; KLOSOSKI, S.J.

ABSTRACT

Citriculture is the most recent agricultural alternative in the northwestern region of Paraná in which Paranavaí city is the largest orange producer in the region. This raw material is mainly used for juice fruit production, however, a fibrous residue rich in essential oils is also obtained. This byproduct is intended for orange essential oil extraction, resulting in the generation of residual bagasse, which is produced in significant volumes. In this sense, this defatted residue (bagasse) can be used in the production of flour that can be used as a source of fiber in food products. The objective of this study was to produce bread with defatted orange pomace flour (DOPF) with and without the addition of polydextrose. In addition, the water activity (A_w) as well as the microbiological stability for total coliforms, thermotolerant coliforms and *Salmonella* sp. was also evaluated. Four formulations were produced: (1) conventional bread, (2) 2% polydextrose added bread, (3) 7% substitution of wheat flour for DOPF and (4) 7% wheat flour by DOPF and 2% polydextrose. The microbiological stability of all bread formulations was accompanied during 8 days according to the methodology proposed by the Manual of Standard Methods for Microbiological Analysis of the Ministry of Agriculture, Livestock and Food Supply. All microbiological parameters evaluated were compliant with the Brazilian legislation, demonstrating both freshness and good practices during production. Regarding A_w analysis, no statistical differences could be observed between all formulations evaluated. In addition, no changes in A_w was found between de first and the eighth day of storage. The overall results indicate bread produced with DOPF is stable in terms of microbiocidal and Aw during the storage period evaluated.

Keywords: food safety; microbiological stability; orange residues.

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