

## Characterisation of Lacto-Fermented Cricket (*Acheta domesticus*) Flour and Its Influence on the Quality Parameters and Acrylamide Formation in Wheat Biscuits

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The aim of this study was to evaluate the influence of different amounts (40, 80 and 100g) of non-fermented and fermented (with *Lactiplantibacillus plantarum* No. 122 and *Lactocaseibacillus casei* No. 210) cricket flour (Cr) on the quality characteristics and acrylamide formation in wheat biscuits (WB). The main formula for WB preparation consisted in 280g of wheat flour, 100g of margarine, 50g of saccharose, 3g of vanilla sugar, 50g of eggs, 1.5g of salt and 2.0g of baking powder. It was established that the highest lactic acid bacteria (LAB) number was in 48h with No. 122 fermented Cr (11.8 log<sub>10</sub> CFU/g) and the lowest pH (4.34) was obtained after 48h of Cr fermentation with both the tested LAB strains. The total colour difference were in the range of 17.54 to 22.08 and, in every case, fermented samples were clearly distinguished from untreated ones. Fermentation increased tyramine content in Cr (from 13.0 to 29.2 times). The main FA in Cr were palmitic acid, stearic acid, octadec-9-enoic acid and linoleic acid. The lowest acrylamide content (84.1 µg/kg) was found in WB with 40g of Cr fermented with No. 210. Significant differences in WB overall acceptability were not found. However, the highest intensity of emotion "happy" was elicited by WB with 80g of Cr fermented with No. 122. Due to the demonstrated decrease of acrylamide content, fermented Cr can be considered a beneficial ingredient for the manufacture of WB.