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Quality characterization of kitoza, a malagasy meat product

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Kitoza is a traditional product of Madagascar which was previously prepared for kings and nobles. It is made from beef or pork strips, 20 to 50 cm long and 2 to 4 cm wide, salted and then dried and/or smoked. *Kitoza* consumption has currently increased because of its ready availability on local market. *Kitoza* is also homemade from fresh raw meat. In all cases, the biochemical and microbiological quality of *kitoza* is not controlled.

Within the framework of AFTER (African Food Tradition Revisited by Research), a project which aims in improving the quality and safety of African traditional food, 60 samples (30 beef, 30 pork) of *kitoza* were analyzed. They were collected in Antananarivo and included 15 salted/smoked *kitoza* and 15 salted/dried *kitoza* for each type of meat.

From a physico-chemical point of view, results showed that the average moisture content was 42.0 ± 11.4 g/100g for beef (B) and 41.1 ± 12.9 for pork (P) with A_w equalling 0.89 ± 0.08 (B, P). Its salt content was not very high (B: 3.25 ± 1.19 g/100g; P: 3.4 ± 1.7). Lipid content was 10.5 ± 5.5 g/100g (B) and 18.1 ± 9.8 (P) and protein was 25.1 ± 23.7 g/100g (B) and 40.7 ± 9.1 (P). *Kitoza* had a titrable acidity of 11.9 ± 2.8 meq/100g (B) and 9.9 ± 3.5 meq/100g (P) and a pH of 5.79 ± 0.22 (B) and 6.29 ± 0.47 (P). Beef *kitoza* contained 0.095 ± 0.156 g/100g D-lactic acid and 1.32 ± 0.36 g/100g L-lactic acid and pork 0.139 ± 0.158 D- and 0.23 ± 0.27 L-. Smoked products had a total phenols content of 2.30 ± 1.44 mg/100g (B) and 3.25 ± 1.98 mg/100g (P) while the dried ones had 0.30 ± 0.40 mg/100g (B) and 0.45 ± 0.36 mg/100g (P). TBARS indices were 3.39 ± 3.68 mg/kg (B) and 3.61 ± 3.88 mg/kg (P).

According to microbiological analyses, there was no *Salmonella* in all types of *kitoza*. However, pork *kitoza* and dried beef *kitoza* presented high concentration of FAMT (B: $8.1 \log_{10}$ UFC/g; P: $9.3 \log_{10}$ UFC/g). The level of *Escherichia coli* was high in pork *kitoza* while it was satisfactory in beef.

Keywords: *kitoza*, Madagascar, physico-chemical analyses, microbiological analyses