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Development of a healthy vegan sausage using young green jackfruit, oyster mushroom and coconut flour

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Background: In the modern world, people are moving towards vegan, vegetarian or healthy lifestyles as excessive consumption of meat and processed meat have increased the incidence of non-communicable diseases such as cancers, cardiovascular diseases, type 2 diabetes, and high blood pressure, and communicable diseases like bird flu, swine flu, and COVID 19. Countries like Germany, United Kingdom, and Australia are more concerned about processed vegan meat and there is a huge demand for soy based vegan products which results in greater environmental impact. Most soy is produced from genetically modified plants and considered as unhealthy due to allergies, antibiotic resistance, gene transfers, and toxic responses.

Objective: The main objective of this study was to develop a healthy substitute for processed meat.

Method: As major ingredients young green jackfruit (*Artocarpus heterophyllus*), oyster mushroom (*Pleurotus ostreatus*), and coconut flour (*Cocos nucifera* Lin.) were used considering their nutrition, texture properties relevant to meat, and the novelty of the mixture from other meat substitutes. The sausage was developed based on SLS 1218:2001 standard, subjected to sensory evaluation, proximate analysis using AOAC and SLS methods, and microbiological analysis for one month. Artificial flavouring agents or preservatives were not used and the method of vacuum packaging was used to ensure a shelf-life of one month.

Results: The moisture, crude protein, total fat, crude fibre, and ash content of the sausage were 64.5±0.2%, 4.0±0.3%, 5.9±0.3%, 1.2±0.2% and 2.6±0.2% respectively. Total carbohydrate value and energy profiles were 21.8±0.4% and 156.3 kcal/100g respectively, and were calculated according to Codex Guideline on Nutrition Labelling. In the microbiological analysis, the total plate count was 3.6 x 10⁴, and yeast and moulds were not detected for a period of month. The results were under the accepted limits.

Conclusion: This vegan sausage can be presented as a natural and healthy processed meat substitute specially for vegans and vegetarians.