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Can Composite Flours from Climate-Resilient Crops in Africa Replace Wheat Flour in Baked Products?

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Abstract

Sorghum, cassava, and cowpea are climate resilient crops in sub-Saharan Africa. They have the potential to be used in baked products. However, more insights on their contribution to sensory properties of bread products or other baked products are required. Compositing flours could be a practical approach to optimise desirable sensory properties while minimising undesirable sensory properties to increase their utilisation. In this study, the effect of compositing sorghum, cowpea, and cassava flours on sensory properties of flatbreads were investigated. Flatbreads made from sorghum (70%) and whole cowpea (30%) flours had intense sorghum aroma, dry appearance, grainy texture and left residual particles after swallowing. Cassava (70%) and cowpea (30%) flatbreads were characterised by fermented aroma and flavour, creamy and yellow colour. Beany flavour in sorghum-cowpea and sorghum-cassava-cowpea flatbreads were similar and slightly higher than cassava starch-cowpea flatbreads. The L* value and chroma were lowest for sorghum-cowpea flatbreads and highest for cassava-cowpea flatbreads while a* value was highest for sorghum-cowpea flatbread. The result from this study showed the potential use of sorghum, cassava and cowpea composite flour and provides useful insights on how they can serve as wheat flour replacement. Information from this study can guide food product developers towards the development of new bread products from sorghum, cassava, and cowpea composite flours for consumers, thereby reducing Africa's excessive reliance on wheat flour imports and moving Africa towards a more sustainable food system.

Biography: Rita Dankwa

Rita Dankwa is a PhD candidate in the Department of Consumer and Food Science at the University of Pretoria, South Africa. She holds MSc in Food Science and Technology. Her research interest lies in the field of Sensory science and Food chemistry.