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Volatile metabolite profile of dawadawa (a fermented condiment) from Bambara groundnut (*Vigna subterranea*)

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In this study, dawadawa was obtained from undehulled and dehulled Bambara groundnuts and its volatile components profiled using Gas Chromatography-High Resolution Time-Of-Flight Mass Spectrometry (GC-HRTOF-MS). Mean of triplicate GC-MS analysis results of the dawadawa samples showed several volatile compounds which were modified with varying fermentation conditions. A total of 136 volatiles compounds were identified and these were phenols (8), sterols (6), amines (3), benzenes (3), vitamins (3), sulphur related compounds (5), alcohol (4), ketone (9), cyclic (1), aldehyde (1), esters (36), fatty acid methyl ester (6), nitrogenous (2) and miscellaneous compounds (26). Some of these volatile compounds were identified in the two types of dawadawa (dehulled and undehulled) some were detected in only dehulled dawadawa with more compounds in the dehulled samples. This might be that some compounds are broken down or converted to other compounds through microbial activity or chemical reactions. Esters are the dominant compounds identified in contrary to other studies on volatile compounds of other fermented condiments. This study shows that fermentation of Bambara groundnut into dawadawa led to increase, decrease and formation of some relevant volatile compounds.

Biography

Janet Adeyinka Adebiyi is currently a 2nd year Doctoral student in the University of Johannesburg. She is developing two types of fermented condiment known as dehulled and hulled dawadawa product from bambara groundnut and investigating the biochemical and health promoting properties of this product, evaluating its safety and variations in its metabolite profile.

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