Enhancing Chocolate Flavour Quality – Effects of Technological Modifications during Fermentation of Ghanaian Cocoa Beans

Dr. Emmanuel Ohene Afoakwa, (PhD)

Available at: https://works.bepress.com/emmanueloheneafoakwa/105/
Enhancing Chocolate Flavour Quality – Effects of Technological Modifications during Fermentation of Ghanaian Cocoa Beans

Emmanuel Ohene Afoakwa, PhD.
Department of Nutrition and Food Science, University of Ghana
P. O. Box LG 134, Legon – Accra, Ghana
E-mail: e_afoakwa@yahoo.com / eafoakwa@ug.edu.gh, Tel: +233-244-685893

ABSTRACT:
Chocolate flavour characters not only originate in precursors present in cocoa beans, but are generated during fermentation and drying, and transformed into desirable flavour notes in the manufacturing processes. Complex biochemical modifications of cocoa bean constituents are further altered by thermal reactions in roasting and conching, and in alkalization leading to the development of the finished flavour character. However the extent to which pulp pre-conditioning and fermentation technologies influences chocolate flavour formation and their relationships with the final flavour quality remains unclear. This study investigated the effect of pod storage (as a means of pulp preconditioning) and fermentation on the chemical composition, flavour precursor development and fermentative quality of Ghanaian cocoa beans. The effects of pulp pre-conditioning and fermentation caused significant variations on the chemical composition, flavour precursors concentrations, polyphenolic and anthocyanin content and fermentative quality. With increasing specialty niche products in chocolate confectionery, greater understanding of factors contributing to variations in flavour character during cocoa fermentation would have significant commercial implications.