

Non-conventional yeast species in novel sustainable food fermentation processes: Unravelling the eco-physiological implications of key metabolic pathways.

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The relatively diverse group of non-conventional yeast (NCY) species found in various natural food fermentation processes is scarcely studied since *Saccharomyces cerevisiae* has dominated yeast research. Nyanga et al. (2007) isolated many yeasts species from fermented *masau* fruits, among which *Saccharomyces cerevisiae* and the NCY species *Pichia fabianii* and *Pichia kudriavzevii* were found. The importance of exploring these NCY species is emphasized by their natural low ethanol production and relatively high aroma formation, which makes them interesting candidates for pure and/or mixed starter cultures. Understanding of their behaviour in food fermentation processes requires extensive knowledge of their physiology, metabolism and genomics and would facilitate their applicability as starter culture. Special focus on the activity and regulation of amino acid degradation pathways will reveal knowledge to control growth and aroma production under anaerobic conditions.

In this study, three isolates from the same niche (fermented *masau* fruits) have been selected; *Saccharomyces cerevisiae* 131, *Pichia fabianii* 65 and *Pichia kudriavzevii* 129 (Nyanga et al., 2007). Recent experiments showed the ability to steer the aroma production in these yeast species and demonstrated species specific aroma profiles.

Nyanga, L. K., M. J. Nout, T. H. Gadaga, B. Theelen, T. Boekhout, and M. H. Zwietering. 2007. Yeasts and lactic acid bacteria microbiota from *masau* (*Ziziphus mauritiana*) fruits and their fermented fruit pulp in Zimbabwe. *International journal of food microbiology* 120(1-2):159-166.