Genotypic and phenotypic characterization of garlic-fermenting lactic acid bacteria isolated from som-fak, a Thai low-salt fermented fish product - DTU Orbit (09/08/2019)

**AIMS:** To evaluate the importance of garlic for fermentation of a Thai fish product, and to differentiate among garlic-/inulin-fermenting lactic acid bacteria (LAB) at strain level. METHODS AND RESULTS: Som-fak was prepared by fermentation of a mixture of fish, salt, rice, sucrose and garlic. pH decreased to 4.5 in 2 days, but omitting garlic resulted in a lack of acidification. LAB were predominant and approximately one third of 234 isolated strains fermented garlic and inulin (the carbohydrate reserve in garlic). These strains were identified as *Lactobacillus pentosus* and *Lact. plantarum*. Randomly Amplified Polymorphic DNA (RAPD) analysis revealed one major RAPD type (29 strains) isolated from all stages of fermentation. CONCLUSION: Garlic was essential for acidification of som-fak and garlic-fermenting strains constituted a significant, homogeneous part of the LAB flora. SIGNIFICANCE AND IMPACT OF THE STUDY: The present study indicates the role of fructans (garlic/inulin) as carbohydrate sources for LAB. Fructan fermenters may have several biotechnological applications, for example, as probiotics.

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