



T4-10 Effect of Probiotic on the Survival of Non-O157 Shiga Toxin-producing *E. coli* (STEC) Strains in African Fermented Weaning Food Products

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Introduction: Ogi is a fermented maize gruel in Nigeria and the commonest traditional fermented weaning food in many communities of West African while motoho is a fermented sorghum beverage commonly produced in Southern Africa countries. High prevalence of diarrheal diseases, among infants in developing countries coupled with the occurrence of pathogenic *E. coli* in fermented foods, is an indication of an underlying safety problem.

Purpose: In this study, the ability of probiotic bacteria to inhibit acid tolerant non-O157 STEC strains from environmental sources was investigated in ogi and sorghum motoho.

Methods: Ogi was processed by steeping the maize grains spontaneously and also with probiotic (*L. plantarum*-B411) for 72 h followed by souring (after wet milling and sieving) for 48 h while the probiotic (*L. plantarum*-FS2 and *P. pentosaceus*-D39) strains developed from ogi fermentation were used for the processing of sorghum motoho. All samples were inoculated with acid adapted (AA) or non-acid adapted (NAA) non-O157 STEC strains.

Results: The growth of AA and NAA non-O157 STEC strains were significantly ($P \leq 0.05$) inhibited in the spontaneous combined with probiotic fermented ogi, while AA non-O157 STEC strains were more significantly ($P \leq 0.05$) inhibited than NAA non-O157 STEC strains in the fermented sorghum motoho after 24 h.

Significance: Probiotic bacteria coupled with prior adaptation to acid i.e., backslopping are more effective in controlling the occurrence of environmental acid tolerant non-O157 STEC strains in traditional fermented weaning foods than the usual uncontrolled spontaneous fermentation.

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