

**THE INFLUENCE OF LACTIC ACID FERMENTATION ON  
BIOGENIC AMINES AND VOLATILE COMPOUNDS FORMATION  
IN FLAXSEED AND THE EFFECT OF FLAXSEED SOURDOUGH  
ON THE QUALITY OF WHEAT BREAD**

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The aim of the study was to investigate if differences in acidification, biogenic amines (BA) and volatile compounds (VC) occurred when *Lactobacillus sakei* KTU05-6, *Pediococcus acidilactici* KTU05-07 and *Pediococcus pentosaceus* KTU05-8 are used as starters in solid state fermentation of flaxseed and the impact of flaxseed sourdough on the wheat bread making process assessed. Results have shown that in SSF flaxseed with *P. acidilactici* and *P. pentosaceus* produced more acids than with *L. sakei*. A correlation between pH and moisture content ( $R = 0.9783$ ;  $P = 0.0002$ ) and between moisture content and total titratable acidity ( $R = 0.7150$ ;  $P = 0.0339$ ) was noticed. BA content in fermented flaxseed is far below those levels causing a health risk. Also, the use of lactobacillus for flaxseed fermentation has an influence on VC formation and the biggest influence on flavor formation had such compounds as: acetic acid, acethyl methyl carbinol and benzaldehyde. The main flavor component of flaxseed is p-cymene. Addition of fermented flaxseed to a standard wheat bread formula doesn't show big changes of the bread crumb structure. We conclude that fermentation allows enriching wheat bread with 10% of partially defatted flaxseed without affecting the quality in a negative way.

Keywords: fermentation, flaxseed, lactobacillus, bread, quality

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