

Fermented rapeseed as a basis for new products with nutritional benefits

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Abstract

The so called "rapeseed tempeh" builds the basis of this master thesis. It consists of fermented rapeseed cake and is prepared as its role model soy tempeh from Indonesia. A comprehensive overview about potential vitamin biosynthesis was given within this thesis. An enrichment of rapeseed tempeh with vitamin B12 and folic acid was aimed to be achieved by bacterial fermentation. According to the literature review *C. freundii* and *L. plantarum* are the best producers of vitamin B12 and folic acid. Unfortunately, the respective strains were not obtainable. For this reason a fermentation with additional sour dough was performed to use the potential ability of some lactobacilli strains to produce folic acid. The vitamin content was determined experimentally via microbiological assay. A decrease in vitamin concentration was observed after fermentations. No enrichment could be achieved. The concentrations were far behind the recommended dietary allowances. Further experimentally research needs to be done about the ability of biosynthesis of bacterial strains. A vegetarian delicatessen pastry spread was successfully developed on the basis of fermented rapeseed as part of this master thesis. The bitterness of the rapeseed tempeh could be successfully covered by using lecithin and tomato puree in the recipe. A simple descriptive analysis and a focus group discussion were performed to receive a final evaluation of the prototype. These qualitative research methods built the basis for further quantitative research.