

ABSTRACT

In this study, the improvement of Thai fermented soybeans was carried out using the co-culture between the bacterium *Bacillus subtilis* TN51 and the fungus *Rhizopus oligosporus*. Initially, some general characteristics (i.e., morphology, biochemistry, and genotype) of both cultures were investigated. The fermentation of the soybeans using these starter cultures was then performed by varying the ration of the bacterium and the fungus. Five different ratios between *B. subtilis* and *R. oligosporus* used were 100:0, 75:25, 50:50, 25:75, and 0:100, respectively. The fermentation was then carried out at 30 °C for 72h, and the samples were then taken to determine their proximate analysis. The results showed that there were some differences in chemical compositions between the fermented and non-fermented soybean. In general, the microbial fermentation increased fat contents, and decreased the contents of moisture and ash. However, the uses of microbial inocula at different ratios seemed not to significantly affect the proximate analysis of the fermented soybeans.

Keywords: Thua Nao; fermented soybean; *Bacillus subtilis*; *Rhizopus*