2-O05-3

Potential of *Rhizopus* spp. as an Inoculum in Determining the Quality of Tempe

Anastasia Tatik Hartanti, Meda Canti, Kevin Filbert
Faculty of Biotechnology, Atma Jaya Catholic University of Indonesia, Indonesia

Rhizopus spp. are the main mold in tempe fermentation. Currently, tempe inoculum in Indonesia is dominated by *Rhizopus microsporus* var. oligosporus as the impact of the commercialization of one the inoculum. The potential of other variety of *R. microsporus* and other species, such as *R. delemar* and *R. stolonifer* as an tempe inoculum were needed to be studied.

Purpose: This study were to determine the quality of tempe produced by several *Rhizopus* strains.

Methods: In this study, we used *R. microsporus* (ATH1, ATH24, ATH26, and ATH40), *R. delemar* (ATH53 and ARPE), and *R. stolonifer* (AR1) as inoculum of tempe. As the control, we used commercial inoculum.

Results and conclusion: The results showed all the tempe produced were white in colour, while ATH24 and ATH26 were yellow colour. Protein content (46-58%) and fat content (more than 8%) of all tempe produced were higher than the Indonesian National Standard (SNI). Antioxidant activities of all tempe produced was not significant difference compared to the control. Overall preference attribute of sensory test showed tempe AR1 was significantly different compared to control. Tempe AR1 and ATH26 were more preferred than other tempe. Antibacterial test results showed all tempe extracts inhibited growth of gram-positive bacteria (*Bacillus cereus* and *Staphylococcus aureus*), except tempe ATH 26 and ATH 40 extracts did not inhibit *S. aureus*. All tempe extracts were not inhibited the growth of gram-negative bacteria (*Escherichia coli* and *Salmonella typhimurium*). All inoculums used in this study have the potency to be developed as tempe inoculum.