

Resistant starch evaluation and in vitro fermentation of lemantak (native sago starch), for prebiotic assessment

ABSTRACT

Resistant starch is the non-digestible portion of starch that reaches the colon and act as a prebiotic to stimulate the activity and growth of beneficial gut microbiota. In the present study, resistant starch content of native (lemantak), commercialized and retrograded sago and starch was analysed, and the in vitro fermentability with known probiotics were investigated. Retrograded starch was produced through two cycles of autoclaving and cooling steps. The resistant starch content of each modified starch were measured based on the method approved by AOAC 2002.02. The in vitro batch fermentation was carried out with inoculation of *Lactobacillus acidophilus* and *Bifidobacterium animalis* at 37°C for 24 hours in anaerobic condition. Total bacteria was enumerated at 0, 6, 12 and 24 hours. Highest resistant starch content was shown in lemantak (native sago starch) at 62.61%. Lemantak was also shown to be the most preferred fermentation substrate with the highest number of total bacterial count at all sampling hours. These findings suggest the potential of lemantak as a prebiotic.

Keywords: Sago; Tapioca; Resistant starch; Prebiotic; Probiotic