

Characterization of rambutan (*Nephelium lappaceum* L.) seed fat and antinutrient content of the seed during the fruit fermentation: effect of turning intervals

ABSTRACT

The present study investigated the effect of turning intervals on the composition and thermal behavior of rambutan seed fat and anti-nutrient content of the seed during rambutan fruit fermentation. Peeled rambutan fruits were subjected to eight days of fermentation at different turning intervals (no turning, turning at every 24, 48 and 72 h). Results showed that increase of turning frequency did not affect the characteristics of the seed fat, but the contents of tannin and saponin of the seeds reduced significantly ($p < 0.05$) by 8–36% and 4–37%, respectively. Regardless of turning intervals, after eight days of fermentation, the seeds contained about 32 g/100 g of crude fat with oleic (41.02–42.38%) and linoleic (27.91–33.10%) acids being the major fatty acids. Five unknown TAGs were found in the fermented seed fat and they constituted about 90.67–91.32% to the total of TAG. Results also showed that the seed fat without turning during fermentation had higher crystallization onset and complete crystallization temperatures compared to that of seed fat with turning. In short, turning brought about beneficial effects to the seeds by reducing its anti-nutrient content and subsequently, the fat from the fermented seeds could be used as a cocoa butter extender.

Keyword: Rambutan fruit; Natural fermentation; Fat characteristics; Saponin content; Tannin content