

## **Variability in the fermentation index, polyphenols and amino acids of seeds of rambutan (*Nephelium lappaceum* L.) during fermentation**

### **ABSTRACT**

The variability in the fermentation index, polyphenols, and amino acids of rambutan seeds was investigated during fermentation. Results revealed that fermentation index (FI) value  $\geq 1$  was achieved on the 4th day of fermentation. While fermentation significantly reduced the levels of total polyphenols (59%), tannin (60%), and saponins (33%), it seems to have a moderate effect on geraniin, corilagin, and a much stronger effect on ellagic, and gallic acids. During fermentation, variability in gallic acid, geraniin, corilagin, and ellagic acid did not show a consistent trend. In contrast, amino acids significantly decreased up to the second day of fermentation. Importantly, amino acids (phenylalanine, tyrosine and leucine) with characteristic bitter taste showed reductions of 20%, 30%, and 40%, respectively after 10 days of fermentation. Sucrose, which was the only sugar present in significant concentrations in unfermented seed, was significantly reduced by fermentation.

**Keyword:** *Nephelium lappaceum*; Fermentation index; Polyphenols; Amino acids; Food analysis; Food composition; Food processing; Nutrient retention