

Effect of surface area of clay pots on physicochemical and microbiological properties of stingless bee (*Geniotrigona thoracica*) honey

ABSTRACT

High moisture content (>20%) in stingless bee (kelulut) honey contributes to many undesirable reactions that deteriorate the quality of the honey. This study proposed an alternative method to facilitate moisture reduction in *Geniotrigona thoracica* honey using unglazed clay pots with different surface diffusion areas. Stingless bee honey with an initial moisture content of 26.4 ± 0.3 g/100 g was placed in two custom-designed clay pots, and a glass bottle (control), stored at 25 ± 2 °C and evaluated for 10 days. Results showed that the honey stored in the clay pot with the larger surface area reduced moisture content more effectively, i.e., <20% in <3 days. The pH and free acidity did not change over the storage period, indicating that the honey was stable against fermentation. Hydroxymethylfurfural was not detected in all samples, showing that the quality of honey was preserved. Molds and yeasts were not detected in honey stored in clay pots as the a_w was relatively low (<0.63).

Keyword: Clay pot; *Geniotrigona thoracica*; Honey fermentation; Hydroxymethylfurfural; Kelulut; Meliponinae; Stingless bee honey; Yeast