

Shelf life determination of durian (*Durio zibethinus*) paste and pulp upon high pressure processing

ABSTRACT

Globally, there has been an increase in demand for durian. Therefore, it is important to extend the shelf life and at the same time, maintain the quality of durian. This study investigated the effect of high-pressure processing (HPP) on the shelf life of durian paste and pulp. Specifically, HPP treatments of 500 MPa for 5 min on nylon- and skin film-packed durian pulp, and 600 MPa for 5 min on nylon-packed durian paste were applied. It was found that throughout the 56-day storage period, the total soluble solids (TSS), pH and titratable acidity of durian paste and pulp showed no significant changes ($p>0.05$). The colour (L^* values) of nylon-packed untreated durian pulp showed no significant changes ($p>0.05$), while the untreated durian paste and skin film-packed durian pulp showed significant changes ($p<0.05$). As for chroma values, it showed no significant changes ($p>0.05$) throughout the storage period. The microbial levels of all the high-pressure (HP)-treated durian samples remained below the detection limit till the end of the storage study. HP-treated durian samples showed lower enzymatic (polygalacturonase and pectin methyl esterase) activities compared to untreated sample throughout the storage period. Sensory evaluation showed no significant difference ($p>0.05$) between untreated and HP- treated samples. In summary, HPP effectively maintained the overall quality of durian for a minimum of 56 days.

Keyword: High-pressure processing; Durian; Shelf life; Microbiological count; Polygalacturonase; Pectin methyl esterase