Thesis	Assessment of anti-rancidity of local edible plants in pork patties
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ABSRACT

The total phenolic content and antioxidant capacities of 22 ethanolic plant extracts were examined. Total phenolic content (TPC) was measured by Folin-Ciocalteau reagent method while three different assays; 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical scavenging activity, 2- deoxy ribose degradation assay (2-DR) and thiobarbituric acid reactive substances (anti-TBARS) assay were applied to determine their antioxidant capacities. The plant extracts showed large variations in TPC and antioxidant capacities. The highest values of TPC, DPPH, 2-DR and anti-TBARS were observed in the extract of *Glochidion sphaerogynum*, *Glochidion sphaerogynum , Eleutherococcus trifoliatus* and *Cratoxylum formosum* respectively. The good correlation coefficient (r) was only observed in between TPC and DPPH (r=0.957) while 2-DR had poor correlation with TPC (r=0.521) and DPPH (r=0.556). Anti-TBARS showed very poor correlation with other assays.

One percentage (wt/wt) of each plant powder was added in cooked pork patties during preparation step. The overall difference test was performed in order to select five potential plants. Sensory evaluation, then, was determined using 7- points Hedonic scales. Based on chemical and sensory analysis, Talo (*Schima Wallichii*) and Teaw (*Cratoxylum formosum* were selected for further experiment.

Talo and Teaw powder and extracts were applied into cooked pork patties stored at 4 and -18^{o}C. The pH, color parameters, TBARS and *p*-anisidine (*p*-Av) were determined during storage. The slight increase in total color difference (ΔE) was observed while found no significant change in pH. The TBARS and *p*-AV in control and cooked pork patties with BHT (100 ppm) or

catechin (100 ppm) dramatically increased ($p<0.05$) while found no statistical change in cooked pork patties with plant powder or plant extracts ($p<0.05$). In addition, the changes in patties stored at $4^{o}C$ were higher compared with those stored at $-18^{o}C$.