

Techno-functional properties and in vitro bile acid-binding capacities of tamarillo (*Solanum betaceum* Cav.) hydrocolloids

ABSTRACT

Hydrocolloids were extracted from seed mucilage and the pulp fractions from red tamarillo (*Solanum betaceum* Cav.) mesocarp, and characterisation of their techno-functional properties and in vitro bile acid-binding capacities was performed. The seed mucilage hydrocolloids that were extracted, using either 1% citric acid (THC) or water (THW), had a good foaming capacity (32636%), whereas the pulp hydrocolloids that were extracted, using 72% ethanol (THE) or 20 mM HEPES buffer (THH), had no foaming capacity. The pulp hydrocolloid, however, possessed high oil-holding and water-holding capacities in the range of 3.363.6 g oil/g dry sample and 25627 g water/g dry sample, respectively. This enabled the pulp hydrocolloid to entrap more bile acids (35638% at a hydrocolloid concentration of 2%) in its gelatinous network in comparison to commercial oat fibre and other hydrocolloids studied. The exceptional emulsifying properties (80696%) of both hydrocolloids suggest their potential applications as food emulsifiers and bile acid binders.

Keyword: Tamarillo; Hydrocolloids; Techno-functional properties; In vitro bile acid-binding capacities