

2nd International Conference on

PLANT SCIENCE & PHYSIOLOGY

June 26-27, 2017 Bangkok, Thailand

Biochemical and functional characteristic of *Davidsonia pruriens* and *Davidsonia jerseyana* fruit teaNilesh Nirmal¹, Yasmina Sultanbawa¹ and Ram Mereddy²¹University of Queensland, Australia²Department of Agriculture and Fisheries, Australia

Statement of the Problem: Davidson's plum (*Davidsonia pruriens* and *Davidsonia jerseyana*) is one of the Australian native fruits originated from the North Queensland. The present study was conducted to evaluate and compare the biochemical and functional characteristics of *Davidsonia pruriens* (DP) and *Davidsonia jerseyana* (DJ) fruit tea. Moreover, sensory analyses of fruit teas were also conducted to examine the consumer acceptance.

Methodology: Dried fruits sheets were brewed with boiled water (2 g/250 ml) for 5 min and extract collected. Samples were subjected to biochemical analyses. The phenolic compounds in the samples were assessed by using UHPLC system (Thermo Scientific, Waltham, MA) coupled with MS. Chromatographic separation was carried out with mobile phase A (H₂O containing 0.1% formic acid) and mobile phase B (acetonitrile containing 0.1% formic acid). Organic acid in the samples were analyzed using a binary HPLC pump with photodiode array detector. The antioxidant capacity of samples was determined by using DPPH radical scavenging activity. Sensory evaluation of samples was conducted by using 9-point hedonic scale.

Findings: Total phenolic content in DP and DJ was 10.37 and 11.32 mg GAE/g of dry sheet, respectively. UPHLC analysis of DP and DJ indicated gallic acid was the major phenolic compound with DJ having significantly higher level ($P < 0.05$). Organic acid analysis showed the presence of only mallic acid in both samples. Antioxidant activities of DP and DJ were comparable ($P > 0.05$). Flavor and taste score was higher for DJ compared to DP ($P < 0.05$). However, overall acceptance score for both samples was not significantly different.

Conclusion & Significance: DJ contained high level of gallic acid as well as mallic acid as compared to DP, which affect the taste of the DP fruit tea. However, likeness score for *Davidsonia* plum fruit showed promising results for *Davidsonia pruriens* and *Davidsonia jerseyana* as a fruit tea.

Biography

Nilesh Nirmal has his expertise in evaluation of plant based food additive as replacement to synthetic additives. He has extensive experience in phytochemical analyses, various antioxidant assays, antimicrobial assays, anti-denaturation assays, and antimelanotic assays. He also has interest in enzyme purification, characterization and its application. He introduced the low cost, simple, one step preparation of Brazilian rich compound through column chromatography (Nirmal and Panichayupakaranant, 2014). This technique reduces the extensive financial burden of purification industry. He had developed natural plant based additives for inhibition of blackening in prawn (shrimp). This approach led to the green plant based additives which ultimately help food industries as well as consumer acceptance and well-being.

n.nirmal@uq.edu.au

Notes: