Title The correlation between total phenol and antioxidant capacity of sweet potato (*Ipomoea batatas* L.) with varying flesh color

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Citation ISHS ActaHorticulturae 945:413-419. 2012.

Keyword sweet potato; total phenol; antioxidant; flesh color; 2,2-diphenyl-1-picrylhydrazyl; radical scavenging

Abstract

The study established baseline data on the total phenol content and antioxidant activities of 36 sweet potato (*Ipomoea batatas*) cultivars with distinctive flesh color (white, yellow, orange and purple) grown in Pijit Province in the northern part of Thailand. Total phenol were measured using the Folin-Ciocalteau method while antioxidant capacity in sweet potato flesh was measured by 2,2-diphenyl-1-picrylhydrazyl (DPPH). Total phenol content ranged from 75.47- 1,283.37 µg gallic acid equivalent (GAE) g^{-1} dry weight. The highest phenolic content was found in cultivar 'PJ25' (purple fleshed) and lowest in cultivar 'PJ18' (orange fleshed). Antioxidant capacity in different flesh color ranged from 72.1-84.56% of DPPH inhibition. The highest total phenol was concomitant with the highest antioxidant activity which was 84.56% for DPPH radical scavenging activity on a dry weight in cultivar 'PJ25'. Significant (*P<0.05) positive correlation was observed between total phenol content and antioxidant capacity (%inhibition) for DPPH radical scavenging activity in white (R^2=0.652), yellow (R^2=0.5386), orange (R^2=0.6518) and purple (R^2=0.899) fleshed sweet potatoes.