

Title Effects of various temperature and pH values on antioxidant activity of litchi anthocyanins
Authors N. Ruenroengklin, X.W. Duan, B. Yang, K.N. Prasad, G.P. Cheng, J. Zhong, Y.M. Jiang
Citation ISHS Acta Horticulturae 804:333-338. 2008.
Keywords litchi; anthocyanins; antioxidant; activity; temperature; pH

Abstract

Litchi fruit pericarp contains a large amount of anthocyanins. Litchi anthocyanins show strong antioxidant ability. However, anthocyanins are relatively unstable and, thus, temperatures and pH affect the antioxidant ability. Anthocyanins were extracted from litchi pericarp tissues using 1.5 M HCl in 95% ethanol and then purified using Amberlite XAD-7 resin column and used to examine effects of various temperatures (25, 35, 45, 55 and 65°C) and pH values (1, 3, 5 and 7) on their antioxidant activity using the total antioxidant ability and activities of scavenging 1,1-diphenyl-2-picrylhydrazyl (DPPH) radicals, hydroxyl radical and superoxide anion. Various temperatures and pH values influenced markedly the total antioxidant ability and scavenging activities of DPPH radicals, hydroxyl radical and superoxide anion of litchi anthocyanin. Overall, heat treatment for 30 min. at 45°C exhibited the strongest antioxidant activity while high total antioxidant ability and scavenging activity of DPPH radicals of litchi anthocyanins at pH 3-5 were observed.