**Title** Antioxidant Capacity and Phenolic Content in Litchi (*Litchi chinensis* Sonn.) pericarp

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**Abstract**

Litchi pericarp (LFP) of eight cultivars ('Nuomici', 'Feizixao', 'Guiwei', 'Edanli', 'Yuhebao', 'Dingxiang', 'Wuye' and 'Lanzhu') were studied for phenolic contents and antioxidant activities. Antioxidant activities were elucidated by the 1,1-diphenyl-2-piceyhydrazyl (DPPH) decoloration test and ferric-reducing antioxidant (FRA) assay. Litchi fruit pericarp contains rich phenolic compounds including phenolic acids, flavonoids and proanthocyanidins and exhibits powerful antioxidantive activity against fat oxidation and antiradical activity in vitro. Among the LFP of different cultivars, phenolics ranged from 10 to 24 mg $g^{-1}$ DW, total flavonoids from 15 to 38 mg $g^{-1}$ DW, and proanthocyanidins from 16 to 44 mg $g^{-1}$ DW. These compounds are highest in 'Nuomici', 'Feizixiao' and 'Edanli', moderate in 'Yuhebao' and 'Wuye', and lowest in 'Guiwei', 'Dingxiang' and 'Lanzhu'. The free radical scavenging acitivities were positively correlated with total phenols in different cultivars, while the activity against fat oxidation showed no correlation with phenol levels. The radical scavenging rate ranged from 18 to 72% in DPPH system and ranged from 22 to 57% in FRA system. 'Nuomici', 'Edanli' and 'Guiwei' displayed the lowest peroxidatic values (POV) and therefore the highest fat antioxidant activity. 'Feizixiao', though showed high phenolic content and radical scavenging rate, displayed very poor ability in suppressing fat oxidation.