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열처리가 야콘의 항산화활성에 미치는 영향

Influence of Heat Treatment on the Antioxidant Activities and Polyphenolic Compounds of Yacon(*Polymia sonchifolia*)

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The effect of heat treatment on the antioxidant activity and polyphenolic compounds of yacon extract was investigated. Raw yacon was heated at 100 and 121°C for 15, 30 or 60 min using an autoclave. After heat treatment, the free and bound polyphenolics and flavonoids in the yacon extracts were analyzed. 2,2-Azino-bis-(3-ethylbenzothiazoline-6-sulfonic acid)(ABTS) radical and 1,1-diphenyl-2-picrylhydrazyl(DPPH) radical scavenging activities were measured to evaluate antioxidant activity of the extracts. The polyphenolic contents and antioxidant activities in the extracts increased as heating temperature and time increased. For example, the free polyphenolics and flavonoids content in the extract heated at 121°C for 60 min was increased by 1.16-fold and 1.09-fold compared to the raw yacon, respectively. The ABTS and DPPH radical scavenging activities were increased by 1.71-fold and 1.97-fold compared to the raw yacon, respectively. There was a good correlation between total polyphenolic contents and AEAC($p < 0.01$). Results showed that heat treatment significantly enhanced the overall antioxidant activities of yacon.