

Title Inhibitory effect of onion extract on polyphenol oxidase and enzymatic browning of taro
(*Colocasia antiquorum* var. *esculenta*)

Author Min Young Lee, Min Kyung Lee and Inshik Park

Citation Food Chemistry, Volume 105, Issue 2, 2007, Pages 528-532

Keywords Enzymatic browning; Polyphenol oxidase (PPO); Taro; Onion extract

Abstract

The inhibitory effect of onion extract on polyphenol oxidase and enzymatic browning of taro was investigated. The polyphenol oxidase from taro was strongly inhibited by various reducing agents, such as l-ascorbic acid, l-cysteine, dithiothreitol, glutathione and sodium pyrosulfite. The enzyme was also inhibited by addition of onion extract. Regardless of substrates used, the addition of heated onion extract at 100 °C for 10 min, gave a stronger inhibitory effect on taro polyphenol oxidase activity than did fresh unheated extract. The inhibitory effect of onion extract was dependent on heating temperature and time. The addition of glucose, glycine, or both to the onion extract, during heating, stimulated the inhibitory effect of the onion extract, suggesting that non-enzymatic browning products, produced during heating, might be responsible for the stronger inhibitory action of the heated onion extract.