

Title Effects of pH on the total phenolic compound, antioxidative ability and the stability of dioscorin of various yam cultivars

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Abstract

The purposes of this study were to investigate the antioxidative activity and the stability of dioscorin of various yam cultivars (Mingchien (MC), Tainung No. 2 (TN2) and Keelung (KL)) under the influences of varying pH. Total phenolic contents from all yam varieties were the highest at pH 5, but gradually decreased with elevated pH. The DPPH-scavenging effects of all yam varieties under acidic pH environments were superior to those at other pH, and paralleled the trend of total phenolic content. The ferrous ion chelating capacity was found to be the highest for all yams at pH 8. No dioscorin protein could be extracted at pH 4. At pH 5–10, a single dioscorin protein band with molecular weight of 31 kDa was observed and appeared between the fraction numbers of 25–40. The relative protein surface hydrophobicity (RSo) of all yams was influenced by pH.