

## Identification of Antioxidants in Young Mango Leaves by LC-ABTS and LC-MS

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### ABSTRACT

*Thai eat the young leaves of mango as vegetables. Antioxidants in young leaves of mango cultivars 'Talapnak', 'Chok Anan' and 'Nam Dok Mai' were identified by high-performance liquid chromatography coupled with an online ABTS assay (HPLC-ABTS) and electrospray ionization mass spectrometer (HPLC-ESI-MS). Young leaves of mango cv. 'Nam Dok Mai' had the highest antioxidant capacity. Major antioxidants in young mango leaves were mangiferin and benzophenones (maclurin and iriflophenone derivatives). Mangiferin presented in higher quantities than other compounds in each cultivar, with cv. 'Talapnak' containing the most (37.92±0.98 mg/g DW). The compound with the highest antioxidant capacity in all cultivars was mangiferin pentoside (from 1.19±0.25 mmol TE/g DW in cv. 'Chok Anan' to 2.13±0.04 mmol TE/g DW in cv. 'Talapnak'). The compound with the highest Trolox equivalent antioxidant capacity was maclurin galloyl glucoside (1.75±0.62 mol TE/mol).*

**Keywords:** Young mango leaf, Antioxidant, HPLC-ABTS, Xanthone, Benzophenone

### INTRODUCTION

Mango (*Mangifera indica* L.) is a native plant in South Asia, and distributed across tropical and subtropical regions of the world. It is usually grown for its fruit, which is recognized as the 'king of fruits' or 'superfruit' (Mukherjee and Litz, 2009; Noratto et al., 2010). Besides the fruit, other parts of the mango tree provide value-added products. Mango peel and kernel are by-products of mango processing. Mango peel can be used as a dietary fiber, and mango kernel is used to manufacture mango kernel oil or mango kernel flour (Masibo and He, 2009). In