Formulation and Quality Control of Readily Dissolving Drink Powder from *Antidesma ghaesembilla* Fruits

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ABSTRACT

Antidesma ghaesembilla Gaertn, known as "mamao" in Thai, is a plant with edible purple compound fruits. This experiment was conducted to investigate the 1,1-diphenyl-2-picrylhydrazyl (DPPH)-scavenging activities of extracts from the fruits of mamao prepared by different methods of extraction and drying, and to quantitatively analyze the total phenolic content and the total anthocyanin content. Decoction and drying by evaporating the extract of mamao ripe fruits promoted the extract with the strongest free radical scavenging activity (IC_{50} = 72.42 ± 3.52 µg/ml), with high amounts of total phenolic content and total anthocyanin content of 1.22 ± 0.36 g gallic acid equivalent in 100 g extract (g%GAE) and 7.09 ± 0.24 g cyanidin-3-glucoside equivalent in 100 g extract (g%C-3-GE), respectively. This extract was developed as a readily dissolving drink powder by a wet granulation method and qualitatively controlled by evaluations of loss on drying, thin layer chromatographic (TLC) and infrared spectroscopic (IR) fingerprints. The obtained product was observed to be a pinkish-red powder that contained 3.08 ± 0.81 g%C-3-GE in 1 sachet (14 g) and exhibited free radical scavenging activity equivalent to 0.004 g of vitamin C.

Keywords: *Antidesma ghaesembilla*, Mamao, DPPH scavenging activity, Total phenolic, Total anthocyanin, Readily dissolving powder

INTRODUCTION

Many degenerative pathologies and diseases, including cardiovascular diseases, Alzheimer's, atherosclerosis, inflammation and cancer, are related to the excess production of free radicals (Cross, 1987). To balance free radicals in the body, consuming antioxidant diets, including fruits and vegetables, could help control oxidative stress in humans. Various edible plants in Thailand, such as *Gymnema inodorum, Piper sarmentosum* and *Mentha arvensis*, have been reported to promote *in vitro* antioxidant activities (Chanwitheesuk et al., 2005). Some Thai vegetables