

CHAPTER I

INTRODUCTION



Garcinia dulcis (Roxb.) Kurz is an indigenous plant known in Thai as Ma phuut. The genus *Garcinia* belongs to the family Guttiferae of the order Guttiferales. It is the biggest genus in the family, with 400 species, widely distributed in the old world tropics, especially Asia (Whitmore, 1973).

The plants in the genus *Garcinia* are usually small or medium trees, occasionally shrubs. Bark usually dark brown or black; smooth or adherent scaly. Inner bark with usually opaque, yellow, or, in a few species, white, sticky exudate. Leaves without stipules; base often slightly asymmetric; leathery to papery. Male and female flowers nearly always on different trees (except *G. dulcis* with males and hermaphrodites on same tree), solitary or in small clusters or short racemes, sepals and petals 4 or 5, decussate. Fruits are large, fleshy to woody berry, not splitting open; seated on the usually persistent calyx; tipped by the conspicuous stigma. Seeds one to several, each embedded in pulp (Whitmore, 1973).

According to Tem Smithinand (1980), the species of genus *Garcinia* found in Thailand are as follows.

Garcinia acuminata Planch. & Triana หนอง รong thong (Nakhon Si

(*G. elliptica* Wall.) Thammarat)

G. atroviridis Griff. มะขามเทศ Ma khaam khaek,

ส้มมะน Som ma won (Peninsular);

ส้มเทศ Som khaek,

ส้มพะงุน Som pha ngun (Pattani);

	ส้มทราย Som khwaa <i>i</i> (Trang);
	อาแซะลูก Aa-sae ka-luu-ko (Malay-Yala)
<i>G. costata</i> Hemsl.	มะพืง Ma pueng (Lampang);
	มังคุดป่า Mangkhut paa (Satun)
<i>G. cowa</i> Roxb.	กะมวง Ka muang (Peninsular);
	ชามวง Cha muang (Central);
	มวงส้ม Muang som (Nakhon Si Thammarat); หมากโมก Maak mok (Udon Thani)
<i>G. dulcis</i> (Roxb.) Kurz	มะพุด Ma phuut (Pattani)
<i>G. fusca</i> Pierre	มะตันป่า Madan paa (Maha Sarakham);
	หมากมวง Maak mong (Kamphaeng Phet)
<i>G. gracilis</i> Pierre	บอนง Bong nang (Sakon Nakhon);
	ผักปด Mak paem (Nong Khai)
<i>G. hanburyi</i> Hook. f.	น Rong (Chanthaburi, Trat)
<i>G. hombroniana</i> Pierre	วา Waa (Yala)
<i>G. lanessanii</i> Pierre	ส้มทุ่งใหญ่ Som kung yai (Khon Kaen)
<i>G. mackeaniana</i> Craib	มะดะ Mada (Phrae)
<i>G. mangostana</i> Linn.	มังคุด Mangkhut (General)
<i>G. merguensis</i> Wight	กะมวน Ka nuan (Peninsular); หมาก Khanom pang, ^{หมาก} พืง Khee phueng (Chanthaburi); อาแซ Saa-pae (Malay- Narathiwat); นวน Nuan (Northern);

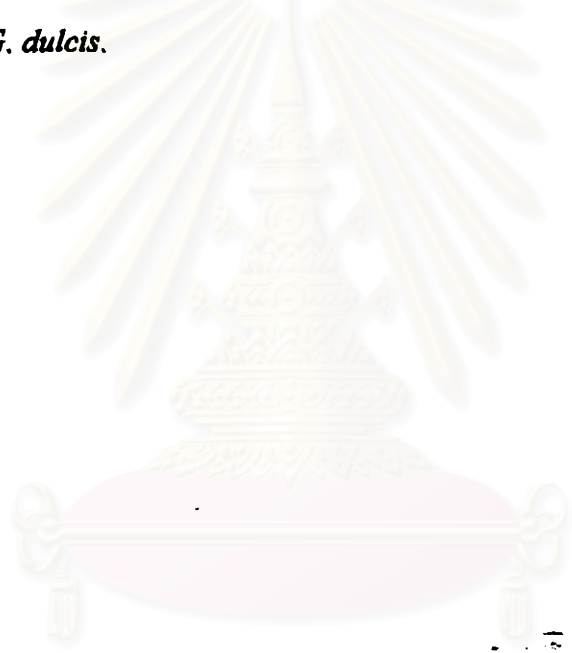
- นครราชสีมา Nuan khao, นครศรีธรรมราช Nuan dong
 (Surat Thani); นครพนม Naun daeng
 (chumphon); นครราชสีมา Nuan paeng
 (Nakhon Si Thammarat); นครราชสีมา Bun yong
 (Lampang); นครราชสีมา Muang nok (Ranong);
 นครราชสีมา Yaang khao (Trat)
- G. nervosa* Miq. นครราชสีมา Cha muang nam (Yala); นคร
 Phuut (Trang, Nakhon Si Thammarat);
 นครราชสีมา Ma phuut paa (Pattani)
- G. nigrolineata* Planch. นครราชสีมา Cha muang (Trat)
- G. rostrata* Benth. & Hook. f. นครราชสีมา Kraduuk nok (Trat); นครราชสีมา
 Muang laai (Surat Thani); นครราชสีมา
 Yaai phuak (Trang)
- G. schomburgkiana* Pierre นครราชสีมา Madan (Central)
- G. spectiosa* Wall. นครราชสีมา Kwak mai, นครราชสีมา Maak kwak
 (Nong Khai); นครราชสีมา Kawaa, นครราชสีมา Phawaa
 (Surat Thani); นครราชสีมา Khwaat (Chiang Rai);
 นครราชสีมา Cha muang (Phichit); นครราชสีมา
 Mara keenok (Chiang Mai); นครราชสีมา
 Mapong (Northern); นครราชสีมา Waa nam
 (Trang); นครราชสีมา Saraphee paa (Central,
 Chiang Mai)
- G. succifolia* Kurz นครราชสีมา Mapong ton (Northern)

<i>G. thorelii</i> Pierre	ฝึน Kok (Phitsanulok); ฝึน Khraak khamin (Lampang); ฝึน Mada kheenon (Chiang Rai)
<i>G. vilersiana</i> Pierre	ฝึน Khai chorakhe, ฝึน Ta phuut (Chanthaburi); ฝึน Cham phuut (Central); ฝึน Praa-hot (Khmer- Surin); ฝึน Pa huut (Northeastern); ฝึน Phawaa baiyai (Chon Buri), Chanthaburi); ฝึน Ma phuut (Central, Peninsular); ฝึน Som pong, ฝึน Som muang (Chanthaburi)
<i>G. xanthochymus</i> Hook. f.	ฝึน Chakhaa-saa (Karen-Mae Hong Son); ฝึน Mada (Northern); ฝึน Mada huang (Chiang Mai)

Garcinia dulcis is a small bushy tree to 9 m tall, similar to *G. mangostana*. Exudate in inner bark white, slowly turning buff on exposure; yellow in the fruit. Leaves: Stalk stout, short, 1 cm; blade big, oblong-ovate, 17 x 9 - 25 x 12 cm, usually widest near the base; gradually tapered to the apex; base usually truncate and slightly heart-shaped; drying grey-yellow; leathery; often very finely hairy below, at least on base of midrib and twig tip, but sometimes quite glabrous; secondary nerves distant, parallel, slightly curving, fainter outwards, looping and joining, with fainter intercostals. Flowers in axillary clusters, on small woody bosses and also in the axils of fallen leaves, males and hermaphrodites mixed; sepals and petals 5, scarcely opening, globular, 6 mm across; with a disc; stalk to 8 mm; males with stamens in 5, fan-shaped groups, no pistillode. Fruits globose to pear-shaped, to 6.5 cm long, ripening light

yellow, pulpy, drying shiny brown-black and curiously wrinkled, as in *G. nervosa*, and with a similar stigma; stalk 1-2 cm. Seeds 1-5, brown, embedded in pale, orange pulp (Whitmore, 1973).

Up to the present, there has been no phytochemical report on *G. dulcis*. This prompted the author to investigate the constituents of this plant in the hope of obtaining additional information to better understand the chemistry and chemotaxonomy of the plants in this genus. This study was concerned with the isolation, purification and structure determination of chemical compounds from the stem bark of *G. dulcis*.



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Figure 1 *Garcinia dulcis* (Roxb.) Kurz (Jansen, 1992)