



CHAPTER I

INTRODUCTION

Artocarpus Linn. is evergreen trees (often very large) belong to the family Moraceae. The morphology describe as:-

Leaves coriaceous, entire (lobe when young) or (*A. superba*) pinnate. Flowers in unisexual heads or spikes, axillary with peltate bracts. Male spikes often cylindrical, or globose. Perianth 2 to 4-lobed, lobes blunt. Stamen 1. Pistillode 0. Female heads globose. Perianth tubular, connate with receptacle. Ovary straight; style central or lateral; stigma entire, rarely lobed. Fruit usually large oblong or globose receptacle clothed with much enlarged fleshy perianths and carpels (anthocarps), the tips hard, spinous or pyramidal or truncate. Achenes deep sunk in the mass. Seed exalbuminous.

The *Artocarpus* is classified into species by taxonomy as follow :-
(Ridley, 1924; Hooker, 1885)

Pinnatifid leave

Fruit globose smooth and green

A. incisa Linn. fil.,

Leave entire

Fruit cylindrical yellow and large

A. integrifolia Linn. Fil.,

Adult leaves entire simple.

Fruit spiny, tips of anthocarps free.

Fruit loped; spines conic; leaf nerves few.

A. forbesii

Fruit not loped, globose, spines terete; fruit bracteate; nerves many.

A. bracteata

Fruit globose yellow, spines sub-tetrate; bract 0; nerves many, hairy beneath

A. rigida

Fruit oblong; leaves very large; anthocarp spines hairy.

A. kunstleri

Fruit tubercled; anthocarp tips flat.

Leaves glabrous.

Leaves ovate; fruit small, tubercles acute

A. peduncularis

Leaves oblong-lanceolate; fruit small; tubercles blunt.

A. lowii

Leaves ovate-lanceolate; fruit large, globular.

A. lanceifolius Roxb.

Leaves hairy

Leaves coarsely hairy beneath; fruit large cylindric, white on stem.

A. polyphema

Leaves minutely pubescent; fruit 1 in long, oblong.

A. maingayi

Leaves soft pubescent; beneath, very large; fruit large, rough.

A. scortechinii

Fruit quite smooth; anthocarps quite united, pulpy.

Fruit cylindric, small

A. denisoniana

Fruit globose; leaves round at base, pubescent beneath.

A. lakoocha

Fruit globose; leaves narrow to base, glabrous.

A. gomeziana

Adult leaves pinnate.

A. superba

Artocarpus lakoocha roxb.(Ma-haad) is stout bushy tree about 40ft. tall; branchlets villous. Leaves rather thin oblong-elliptic or sub-ovate, base round, tip shortly acuminate, soft pubescent beneath; nerves 8 to 12 pairs elevate as are reticulations; 4 to 12 in. long, 4 in. wide; petioles 1 in. long, pubescent. Flowers in axillary globose shortly pedunculate heads ; bracteoles peltate. Male flowers: Sepals 2-3, triangular, truncate, puberulous. Stamen 1; filament broad below, tapering upwards; anther exerted, short, broad, 2 celled. Female flowers: Anthocarps completely united. Fruit soft pulpy, 2 to 3 in. diam., lobulate, smooth, green or orange red, edible. Seed Oblong, few, broad, about 0.5 in. across. (Ridley, 1924; Hooker, 1885; Kirtikar, 1981)

A. lakoocha Roxb. is reported for medicinal activity as followed.

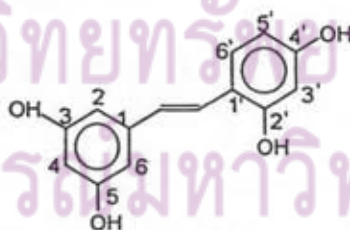
The unripe fruit is hot, sweet, sour; cause constipation, loss of appetite, blood complaints, eye troubles, fever. (Ayurveda)

The ripe fruit is sour, sweet, causes cough, loss of appetite; useful in fever due to cough; tonic to the liver. The seeds are a good purgative for children. (Yunani)

In Bengali, one or two seeds, or a small quantity of the milk, is popular as a purge. Among the Mundas of Chota Nagpur The milky juice is used in very small doses, one or two drops for children, more for adults, as a purge. For small pimples and cracked skin, an infusion of the bark is applied. The bark finely powdered is applied to sores to draw out the purulent matter (Kirtikar, 1981)

In India, 50 mg ethanol:water (1:1) extract administrate intravenous to dog, giving hypotensive activity (Bhakuni et al.,1971).

In Thailand, *A. Lakoocha* Roxb. known as Ma-Haad distributes in the northern, northeastern and central part of Thailand. Its hot water extract from heartwood is called puag-haad, widely used as taenicide by the traditional doctors for centuries. Forty-five mg/kg (body weight) of puag-haad was considered to the dose of choice (Somporn Preuksaraj et al.,1983). The mild and transient side effect of Puag-haad (nausea and vomiting) and high therapeutic efficacy (77-80% cure rate) are reason that puag-haad is one of the most effective taenicides. The chemical formular of purified Puag-haad is reported by Sthang, Robbertson and Tower(1957) to be 3,5,2',4'-tetrahydroxystilbene (1) with the following structure.



(1)

Toxicity assessment is investigated by giving 8 times therapeutic dose to both sexes of rats. The rats are killed and investigated for any pathological effect on the 2nd,

3rd, 7th, 10th, 14th, 30th and 60th days after administrations. There are no pathological change of the viscera. The LD.50 value is evaluated to be 1,148 mg/200 g. (body weight), which is 45.9 times its therapeutic dose (Nantaporn, Rangsun and Walla.,1985). One mg/disc ethanol (95%) extract can inhibit *Bacillus subtilis* and *Mycobacterium smegmatis* on agar plate (Pongpan, A., Chumsri, P., and Taworasate, T. 1982).



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