FATTY ACIDS OF *STERCULIA FOETIDA* SEED OIL

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Sterculia foetida L. Syn. *Clompanus foetida* Kuntze [Sterculiaceae] is called Java olives in English, Sam-rong in Thai, is a large evergreen tree found usually in the western and sounthern part of India, Burma, and Ceylon and occationally in east tropical Africa, Borneo, Java, Sumatra, Indo-China, Malaya, and North Australia. *S. foetida* is a large, straight, deciduous tree growing to 40 m in height and 3 m in girth, with the branches arranged in whorls and spreading horizontally. The bark is smooth and grey. Leaves crowded at the ends of branchlets, digitate, with 7-9 leaflets; leaflets elliptical or elliptic-lanceolate, acuminate, 10-17 cm long, shortly petioluled, with unpleasant smell; petiole 12.5-23 cm long. Flowers in many panicles, subterminal, 10-15 cm long; rather large, green or dull purple; unisexual, with male and female flowers on separate trees; calyx dull, orange colored, deeply 5-partite; lobes 1-1.3 cm long. Follicles scarlet, 7.6-9 x 5 cm, very stout, ultimately woody; seeds 10-15, slate-colored, ellipsoid, oblong, 1.5-1.8 cm with rudimentary yellow aril. The oil from its seeds is called Sterculia oil which is given internally in itches and other skin diseases and is applied externally are a paste[1,2]. The fruit contains a number of peanutlike, oily kernels which are edible and more or less laxative when eaten raw. The oil extracted from the kernels is used locally for illuminating purpose. The kernels are flavored like cacao, but are not bitter and are used to adulterate cacao[2].

Sam-rong seeds were decoated, ground and macerated with hexane. After evaporation of hexane *in vacuo*, the pale yellow oil was collected with the yields of 64.3%. Fatty acid methylester chromatogram by GC showed similar pattern as the previous study of Aued-Pimentel *et al* [3]. Sterculic acid (9,10-methylene-9-octadecenoic) is cyclopropenyl fatty acid which elutes close to linoleic acid (C18:2 n-6, Cis) and is not identified by FID. Identification of sterculic acid and other cyclopropenyl fatty acids by GC/MS is suitable.

Palmitic acid was found as dominant fatty acid (52%) of Sam-rong seed oil in this study. Whereas sterculic acid was found around 10%. This finding was different from previous reports which sterculic acid was shown as major fatty acid (45-72%)[3-6]. Oleic acid in Sam-rong seed oil was higher than other reported *S. foetida* (14% *versus* 6-9%)[3-6]. Oleic acid is proposed to be precursor of sterculic acid biosynthesis catalyzed by cyclo-propane fatty acid synthase and desaturase[7]. More seed oil analytical data of various *S. foetida* geographical distribution in Thailand is needed.

Keywords: *Sterculia foetida*, seed oil

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