



## The optimum conditions for extraction of fatty acids from Mon Thong durian seed kernel and analysis by gas chromatography-flame ionization detector

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The extraction conditions for fatty acids from Mon Thong durian seed kernel from Rayong province were studied. Two grams of dry ground seeds was extracted with 50 mL of dichloromethane: methanol. The optimum conditions were found as follows: without soak sample before extraction is better than soak sample, sonication sample with dichloromethane: methanol in the ratio of 2:1, sonication time 20 min. and methylation time via esterification (at 80°C) for 6 hrs. The methylated samples were analyzed by gas chromatography- flame ionization detector with DB-225 column (20 m length, 0.01 mm. ID., and 0.10 µm film thickness). GC-FID condition was performed as follows: injector and detector temperature at 250°C, split ratio 40:1. The oven temperature was 150°C held for 0.5 min., then increase with the rate of 100°C/min. to 200°C followed by the rate of 60°C/min to 220°C and held for 14 min. The last fatty acid came out at 15.33 min. Seven fatty acids were found as follows: palmitic acid (C16:0)  $37.95 \pm 0.08\%$ , palmitoleic acid (C16:1n7)  $2.48 \pm 0.09\%$ , stearic acid (C18:0)  $4.16 \pm 0.04\%$ , vaccenic acid (C18:1n7)  $7.19 \pm 0.13\%$ , oleic acid (C18:1n9)  $1.43 \pm 0.02\%$ , linoleic acid (C18:2n6)  $14.73 \pm 0.07\%$  and  $\alpha$ -linolenic acid (C18:3n3)  $18.87 \pm 0.32\%$  respectively. The result shows that Mon Thong durian seed can be used as an alternative way as fatty acid source from waste seed.

**Keywords:** Fatty acids; Durian; Seed kernel