

Short Communication

Pak. j. sci. ind. res., vol. 37, no. 4, April 1994

Studies on Chemical Composition of *Annona squamosa* Seed OilL.M. KHATRI, M.K.A. NASIR, MISS ROBINA SALEEM AND
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(Received February 8, 1993; revised December 7, 1993)

Annona squamosa Linn. (N.O. Annonaceae), known as "Sitaphal", "Sharifa" "Custard apple" or "Sugar apple", is extensively cultivated in Pakistan for edible purposes. The pulp of the ripe fruit is sweet, medicinally considered as a maturant and when bruised along with salt, is applied to malignant tumours to hasten suppuration. The seeds are poisonous, killer of the lice in hair and cause abortion. The bark is an anti-diarrhoeal and cure for asthma and fever. The root is a drastic purgative [1,2].

The seeds (200 g) of *A. squamosa* were crushed in an electric grinder and then extracted with hexane in a Soxhlet extractor. The solvent was removed under reduced pressure to afford 31 g of liquid oil which was saponified and methyl esters prepared by usual procedure.

The GLC of the methyl esters was carried out using a G.C-9A Shimadzu gas chromatograph fitted with a flame ionisation detector. The identification and percentage composition of the component fatty acids were determined by running a standard mixture of methyl esters, their retention times and peak areas. The results are given in Table 1.

The physico-chemical values of the oil were determined according to the AOCS methods [3] and are also recorded in Table 1.

In the present studies, the physico chemical properties of *A. squamosa* seed oil have been found quite different from those reported by Kafuku *et al.* [4] and Rao *et al.* [5]. They have reported higher iodine values (80.92) and 84.0 respectively) but lower saponification values (188.76 and 188.0 respectively) and Sp. gravity (0.9127).

The fatty acid composition of the oil shows that it is rich in unsaturated fatty acids (Oleic 56.8 and linoleic 18.6%) which is quite close (54.2 and 20.0%) to that reported by Naidu *et al.* [6], but different from Ramachandra's [7] findings where the content of oleic and linoleic acids is just the reverse i.e. 18.1 and 55.2% respectively.

It has been observed from the literature survey that very little work has been undertaken on the chemical composition

of *A. squamosa* seed oil and this is the first attempt in Pakistan on the physico-chemical properties and fatty acid composition of the oil. The fatty acid composition suggests that this oil can be utilised for edible purposes.

TABLE 1. PHYSICO-CHEMICAL CHARACTERISTICS AND CHEMICAL COMPOSITION OF *ANNONA SQUAMOSA* SEED OIL.

1. Yield	15.5%
2. Moisture	0.175%
3. Acid value	4.6
4. Sap. value	195.5
5. Iodine value	73.6
6. Peroxide value	2.31 Meq/kg
7. Unsap. matter	0.39%
8. Ref. index @ 30°	1.4568
9. Sp. gravity @ 30°	0.9144
10. Flash point	464°

CHEMICAL COMPOSITION

Fatty acid	Percentage
1. C16 : 0	14.2
2. C18 : 0	9.2
3. C18 : 1	56.8
4. C18 : 2	18.6
5. Unknown	0.6

Key words: *Annona squamosa*, Fatty acids, Annonaceae, Custard apple.

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