

SAPOTACEAE

MYRICETIN AND MYRICETIN-3-O-L-RHAMNOSIDE FROM
THE LEAVES OF *MADHUCA INDICA* AND *ACHRAS SAPOTA*

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Key Word Index—*Madhuca indica*; *Achras sapota*; Sapotaceae; flavonols; myricetin; myricetin-3-O-L-rhamnoside.

Plant. *Madhuca indica* J. F. Gmel (Voucher specimen No. 4/72 deposited at JIPMER) (Syn. *M. latifolia* Maeb., *Bassia latifolia* Roxb.) *Uses.* Medicinal,¹ commercial.² *Previous work.* Sterol, triterpene esters and a myricetin-like flavone,³ on sister species.³ *Present work.* Flavonols of the leaves.

The total flavonoid in the concentrate of the hot 80% EtOH extracts of fresh leaves was fractionated by partition between water and organic solvents.

Ether extract. Myricetin and quercetin (characteristic colour reactions, λ_{\max} , acetyl and methyl derivatives, R_f values and co-chromatography with authentic samples).

EtOAc extract. A pale yellow solid (0.15%), m.p. 196–197°, $[\alpha]_D^{30} - 147.5^\circ$ (c 0.8 in MeOH), λ_{\max} (nm) 256, 300 (*b*), 352 (MeOH); 268, 359 (NaOAc); 268, 419 (AlCl₃) and 260, 297 (*b*), 375 (NaOAc + H₃BO₃). The NMR spectrum of the glycoside could not be taken as it was practically insoluble in CDCl₃, CD₃COCD₃ and CF₃COOH. It yielded a crystalline acetate (Ac₂O + Py), m.p. 140–141° and a methyl ether (Me₂SO₄ + K₂CO₃ in Me₂CO, 70°, 36 hr), m.p. 136–137° (deep blue under UV). The glycoside was purple under UV changing to yellow with NH₃, showed typical colour changes with alkaline reagents similar to myricetin and gave green colour with Fe³⁺. On treatment with 5% H₂SO₄ for 1 hr or 1 N HCl for 5 min at 100°, it yielded myricetin and L-rhamnose in the molar ratio of 1.04:1.0. It was unaffected on treatment with 2% HOAc for 2 min at 100°, indicating that it was a monoglycoside.

The glycoside methyl ether on hydrolysis yielded 5,7,3',4',5'-penta methyl myricetin, m.p. 226–227°, Fe³⁺-light pink brown, intense golden yellow under UV, λ_{\max} 260 (*b*), 310 (*b*), 353 (MeOH); 260 (*b*), 310 (*b*), 353 (NaOAc); 271, 335 (*b*), 419 (AlCl₃) and 262, 305 (*b*), 355 (NaOAc + H₃BO₃), and yielded a monoacetyl derivative, m.p. 196–197° (light yellowish brown under UV). From the above data, the glycoside was identified as myricetin-3-O-L-rhamnoside.

The EtOAc mother liquor, after the separation of myricetin rhamnoside, on PC showed two additional spots which were identified as myricetin-3-arabinoside and quercetin-3-galactoside by R_f , products of hydrolysis and direct comparison with authentic samples.

¹ B. MUKERJI, *Indian Pharmaceutical Codex*, Vol. I, C.S.I.R., New Delhi (1953).

² *Wealth of India, Raw Materials*, Vol. VI, p. 207, C.S.I.R., New Delhi (1962).

³ S. C. BHATNAGAR, Y. C. AWASTHI and C. R. MITRA, *Phytochem.* **11**, 465 (1972); and references cited therein.

Plant. *Achras sapota* L. (Voucher specimen No. 5/72 deposited at JIPMER) (syn. *Mimusops manilkara* Don.) *Uses.* Edible fruit.⁴ *Previous work.* Polyphenols of immature fruits,⁵ sterol and triterpenes of fruit,⁶ triterpenoids of leaves;⁷ no work on flavonols.

Present work. Isolation of myricetin and myricetin-3-O-L-rhamnoside (0.1 %) from fresh leaves. Quercetin also identified. Working up and identification as in the case of *M. indica* above.

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⁵ A. G. MATHEW and S. LAKSHMI NARAYANA, *Phytochem.* **8**, 507 (1969).

⁶ G. MISRA and C. R. MITRA, *Phytochem.* **8**, 249 (1969).

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SOLANACEAE

ANTHRAQUINONES AND OTHER CONSTITUENTS OF *FABIANA IMBRICATA*

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Key Word Index—*Fabiana imbricata*; Solanaceae; *n*-alkanes; fatty acids; erythroglauicin; physcion; aceto-vanillone.

Plant. *Fabiana imbricata* Ruiz and Pavon. *Source.* S. B. Penick & Co., New York, Lot No. 913-BJM-1. *Uses.* A medicinal¹ in South America, where the plant is commonly known as Pichi-Pichi. *Previous work.* On twigs,² on twigs and terminal branchlets,³ on tops and twigs,^{4,5} on *F. denudata*,⁶ on *F. squamata*.⁷

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³ O. E. EDWARDS and N. F. ELMORE, *Can. J. Chem.* **40**, 256 (1962).

⁴ M. SILVA, R. STUCK and P. MANCINELLI, *Biol. Soc. Chilena Quim.* **12**, 29 (1962).

⁵ N. K. RICHTMYER, *Carbohydr. Res.* **12**, 233 (1970).

⁶ L. FLORIANI, *Rev. Centro Estud. Farm. Bioquim.* **25**, 60 (1934); *Chem. Abs.* **30**, 6784 (1936).

⁷ G. B. MARINI-BETTÒLO, *Ann. Chim. Applicata* **38**, 305 (1948); *Chem. Abs.* **46**, 6854 (1951).