LETTERS TO THE EDITOR

FLAVONOIDS OF THE FLOWERS OF *LEUCAENA GLAUCA*

Leucaena glauca Benth. (Leguminosae) is a small tree with globose heads of pale yellow flowers cultivated for its green manure. It is reported to cause loss of fertility and as worm repellant and fish poison[1,2]. The seeds of the plant are employed for making fancy bags, baskets and ornaments[3]. *L. glauca* contains an alkaloid lucenin[2], quercetin, quercetagetin, patuletin and isoquercitrin in the fresh flowers[4] and isoquercitrin in the cell free extracts[5]. With a view to locating any additional flavonoid, the flowers of the plant have now been reinvestigated and our results presented below.

Fresh flowers of *L. glauca* collected in Tiruchirapalli around the early part of summer were extracted with 80% alcohol twice by cold maceration and then once in the hot, under reflux. The combined extract was concentrated *in vacuo* and the aqueous concentrate successively partitioned with petroleum ether, peroxide-free ether and ethyl acetate. The petrol fraction on concentration did not yield any crystalline solid. The residue obtained from the ether fraction was dissolved in minimum amount of acetone and cooled in an ice-chest for a few days when some yellow solid separated. On crystallisation from acetone this yielded yellow needles, m.p. 313–15° (decomp.), yield 0·02%. It was identified as quercetin by colour reactions, behaviour under UV and UV/NH_3, R_f values, co- and mixed PC with an authentic sample and preparation and mixed m.p. of its pentaacetate and pentamethyl ether. The mother liquor after removal of the above flavonol was examined on PC and the presence of another flavonol was indicated. This was identified as quercetagetin by its characteristic colour reactions and fluorescence under UV and UV/NH_3 and R_f. The residue from the ethyl acetate fraction was taken up in acetone and left in ice-chest for a few days. The yellow solid which separated, gave yellow needles on repeated recrystallisation from aqueous alcohol, m.p. 236–38° (yield, 0·2%), $[\alpha]_D^{29} = -66°$, λ_{max} (MeOH) 257, 360 nm giving bathochromic shifts of 50 nm with NaOMe, 75 nm with $AlCl_3$, 43 nm with $AlCl_3$/HCl, 17 nm with NaOAc and 15 nm with NaOAc/H_3BO_3 and answered all reactions for a flavonol-3-O-glycoside. It was hydrolysed with 7% sulphuric acid in aqueous methanol for 2 hours when quercetin, m.p. 312–14° and galactose were obtained in equimolar ratio. The identity of the aglycone as quercetin was confirmed by co- and mixed PC with an authentic sample and by preparation of its pentaacetate, m.p. and m.m.p. 193–95°. Similarly, the identity of the sugar as galactose was confirmed by direct comparison with an authentic sample and by preparing its osazone, m.p. 198–200°. The glycoside was thus identified as quercetin 3-O-galactoside by colour reactions, co-chromatography and m.m.p. with an authentic sample of hyperoside.

It may be mentioned that we could not detect patuletin, reported to be present in the petals of *L. glauca*[4]. Instead of quercetin-3-O-glucoside reported earlier[4], we have now isolated the corresponding 3-O-galactoside which may probably be due to ecological and biosynthetic variations. The isolation of flavonols and flavonol-3-O-glycoside is in agreement with earlier observations[6,7] that these are of common occurrence in the Leguminosae.

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