Note

Occurrence of Rotenoids in *Tephrosia strigosa*

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During our continuous search to find out an alternative rich source of rotenoids, the aerial parts of *Indigofera caerulea* Roxb., *Tephrosia strigosa* (Dalz.) Sant. et Maheshw., and *T. villosa* (Linn.) Pers., were investigated. However, these compounds are reported from *Derris elliptica*, *D. ulginosa* and *T. vogelii*,1−5) *T. purpurea*,6−7) *T. falciformis*,8) *Crotalaria burhia*9) and *C. medicagenia*10) so far. The present studies are on the isolation and characterization of deguelin, elliptone and rotenone from *T. strigosa* aerial parts.

Preparation of experimental materials. Aerial parts of *I. caerulea*, *T. strigosa*, and *T. villosa* were collected from the fields during the year 1978. Voucher specimens of each plant species have been deposited in the Herbarium, Department of Botany, University of Rajasthan, Jaipur.

Shade-dried and powdered plant material of each species was extracted separately by acetonitrile saturated with hexane for 48 hr at room temperature by percolation method. The extract was filtered, evaporated to dryness and the semi-solid residue was dissolved in acetone, chromatographed (silica gel) and continuously eluted with acetone. Various fractions of each plant species were pooled together and again concentrated to dryness.

Chemical contents. Thin-layer chromatography (TLC; silica gel; wet thickness 250 μm chloroform–acetone–acetic acid (196:3:1) was carried out of each plant extract and the spots were located by spraying with hydroiodic acid reagent,11 Colored spots, pink (Rf 0.75), blue (Rf 0.80) and blueviolet (Rf 0.50) were observed in the extract of *T. strigosa* only, coinciding to authentic deguelin (D), elliptone (E) and rotenone (R) in Rf values and their characteristic colors respectively.

Co-chromatography on AgNO₃ (24%) impregnated silica gel G plates was also carried out in the above solvent system. The spots were located on these plates by exposing to nitric acid vapor followed by ammonia vapor.2) Same three spots corresponding to reference D, E and R were observed which were later collected by preparative TLC. Each spot was eluted from the adsorbent with acetone, dried at room temperature and tested for their purity.

The three isolated compounds (I−III) were identified by direct comparison with respective authentic compound by mp (I, 180°−181°; II, 161°−164°; III, 196°−198°), mmp (undepressed), characteristic colors on TLC and spectral properties in the UV/visible region. Therefore, compound I as deguelin, II as elliptone and III as rotenone were identified. Quantitative estimation of rotenone (0.74%) in the whole extract was, however, carried out by rat food assay method.

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REFERENCES