623/E2

Fingerprinting market samples of Pterocarpus *santalinus* L. (Rat handun) and its adulterant

W M K B Wambatuwewa[1]*, P L Hettiarachchi [2], A M Abeysekera [1] and T M S G Tennakoon[3]
[1] *Department of Chemistry, University of Sri Jayawardenepura, Nugegoda*
[2] *Department of Botany, University of Sri Jayawardenepura, Nugegoda*
[3] *Research Laboratory, Link Natural Product (pvt) Ltd, Dompe*

Pterocrpus santalinus L. (Fabaceae) commonly known as Rat- handun (Sinhala), is a rare medicinal plant species found mainly in southern Sri Lanka. The objective of the present study is to diagnose key characters to differentiate *P.santalinus* from *Myroxylon balsamum*, which is its major adulterant, found in the local market and to give unique features to authenticate *P.santalinus*.

Twenty seven market samples collected from leading crude drug market in Colombo were used for the study. Heartwood samples of true *P. santalinus* and *M.balsamum* were obtained from trees growing in private gardens. Microscopic analysis and TLC analysis of wood samples and authentic specimens were done using standard methods

Microscopic features of wood scored as detailed structure and arrangement of vessels, vessel deposits, axial parenchyma and ray parenchyma of authentic *P.santalinus* ,Indian Rath-hadun and

Indian Rathkiriya were identical and unique, while features observed in Lanka Rath-hadun and Rathkihiriya were identical with those in *M.balsamum*.

Methanol extract of *P.santalinus*, *M.balsamum* and market samples were chromatographed on the silica gel plates using chloroform:methanol (20:1) as the solvent system. Separated compounds were visualized under normal light using Anisaldehyde/sulphuric acid reagent. A blue coloured spot at R_f (0.6) was observed in the chromatogram of *P. santalinus*, Indian Rath-hadunand and Indian Rathkiriya, which was not found in the chromatogram of *M.balsamum,* Rathkiriya and Lanka Rath-hadun. This was identified as pterocarpol by Mass spectroscopy, ^{1}H and ^{13}C NMR spectroscopy. Microscopic analysis and TLC analysis clearly showed that Indian Rath-hadun and Indian Rathkiriya are identical to *P.santalinus*, while Lanka Rath-hadun and Rathkiriya are identical to *M .balsamum*. This study indicates the possibility of using micro morphological features and TLC fingerprint to differentiate genuine *P. santalinus* from its adulterants in the crude drug market.

*wmkbwambatuwewa@yahoo.com Tel: 011-2409294