971/E2

Phytochemical, physicochemical and antioxidant activity of *Munronia pinnata* (Wall.) Theob. (Meliaceae) and *Andrographis paniculata* (Burm.f.) Wall. Ex Nees (Acanthaceae)

P Adhihetty[1], R M Dharmadasa[1]* P L Hettiarachchi[2] and K Samarasinghe[1]
[1]*Herbal Technology Section, Industrial Technology Institute, Bauddhaloka Mawatha, Colombo 07*
[2]*Rajarata University of Sri Lanka, Mininthale, Anuradhapura*

Munronia pinnata (Wall) Theob. (Meliaceae) (Bin kohomba), is a therapeutically important medicinal plant, which is often adulterated by incorporation of cheap, abundant materials of *Andrographis paniculata* (Burm.f.) Wall. ex Nees (Acanthaceae) (Kiratha). However, available information on comparative physicochemical, phytochemical and antioxidant capacity are inadequate. Therefore, the present study was undertaken to compare major quality standards in terms of physicochemical, phytochemical and antioxidant capacity of *M. pinnata* and *A. paniculata* by using established protocols. Significantly higher values for all tested physicochemical parameters, were observed for leaf extracts. Comparatively higher extractable matter content was exhibited in the hot extraction over the cold extraction method. The increasing order of all physicochemical parameters (moisture content, total ash, water soluble ash, acid insoluble ash and total extractable matter) was leaves > stem > root in both plants. The results demonstrated the presence of all major phytochemicals in all three main parts of both *species* except saponin and steroids in leaf extracts of *A. paniculata.* The results on TLC exhibited a higher number of common spots in leaf followed by stem and roots extracts for both *M. pinnata* and *A. paniculata*. Both plant species possess notable total antioxidant capacity (TAC) of all three parts tested using the quantification of ferric reducing antioxidant power (FRAP) assay when methanol was used as the control. However, *A. paniculata* exhibited higher TAC compared to *M. pinnata*.

Table 1: Total antioxidant capacity of different parts of *Munronia pinnata and Andrographis paniculata*

Plant part	**Antioxidant activity (mg/TE/g)**	
	Munronia pinnata	*Andrographis paniculata*
Leaf	13.08±0.41^{B}	73.96±0.86^{A}
Stem	8.67±0.30^{B}	99.14±1.51^{A}
Root	7.08±0.29^{B}	61.33±0.60^{A}

Means followed by same letter in each column are not significantly different at 0.05 level , **Results are means of three replicates ± SD**

Presence of certain similarities of major phytochemical groups, and antioxidant capacity of *M. pinnata* and *A. paniculata* scientifically validate the traditional claims of use of *A. paniculata* as a substitute for *M. pinnata* in traditional systems of medicine in Sri Lanka.

Key words: Acanthaceae, *Andrographis paniculata*, meliaceae, *Munronia pinnata,* substitute, traditional systems of medicine

dharma@iti.lk Tel: 0718573260