

COMPARATIVE PHYTO - PHYSICOCHEMICAL STUDIES ON SELECTED MEDICINAL PLANTS, ENICOSTEMMA LITTORALE BLUME AND WITHANIA SOMNIFERA DUNAL

Sanmugarajah V1, Thabrew I2, Sivapalan S1

1Unit of Siddha Medicine, University of Jaffna, Sri Lanka; 2Institute of Biochemistry, Molecular Biology and Biotechnology, University of Colombo, Sri Lanka

Medicinal plants have been a major source of treatment for human diseases since time immemorial. The physicochemical evaluation of the plant material is an important parameter in detecting adulteration or improper handling of drugs. The present study was planned to compare the phyto-physicochemical analysis of *Enicostemma littorale* Blume (Whole plant) with *Withania somnifera* (L) Dunal (root). Both plants are medicinally important and used as anti arthritic, anti-inflammatory, antioxidant and hepatoprotective. Six samples of each plant material were standardized according to the methods recommended by the World Health Organization and standard laboratory procedures. All sample results were calculated and mean values and standard deviations were recorded. The highest percentage of water and ethanol (hot) extractable matter; total ash and acid insoluble ash ($37.21 \pm 1.27\%$ & $24.92 \pm 0.64\%$, $8.16 \pm 0.1\%$ & $1.89 \pm 0.1\%$) were found in *E. littorale* when compared with *W. somnifera* ($30.82 \pm 1.09\%$ & $10.0 \pm 0.21\%$, $5.76 \pm 0.1\%$ & $0.63 \pm 0.04\%$). Presence of water soluble ash and sulfated ash ($2.93 \pm 0.15\%$ & $1.92 \pm 0.04\%$) in *W. somnifera* were slightly higher than *E. littorale* ($2.75 \pm 0.1\%$ & $1.30 \pm 0.04\%$) and percentage of loss on drying was found in *W. somnifera* ($9.12 \pm 0.10\%$). It was slightly lower than *E. littorale* ($10.25 \pm 0.33\%$). Preliminary phytochemical screening of these plant materials revealed that presence of alkaloids, saponins, flavonoids, steroids, tannins, proteins, reducing sugar, fat and fixed oils and coumarins in hot aqueous and ethanol extracts. This comparative information provides immense potential for studying their activities for arthritis and other disease conditions, both in pre-clinical and clinical stages, which lead to the preparation of useful pharmaceutical products.