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PAPER

**Phenetic variation and phenolic composition of leaves of *Flueggea leucopyrus* willd. (vern: Katupila) collected from different climatic zones in Sri Lanka**

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*Flueggea* is a genus of thorny shrubs belonging to the family Euphorbiaceae, and represented by two species in Sri Lanka. Currently, *Flueggea leucopyrus* is becoming increasingly popular as an ingredient in several traditional therapeutic systems in Sri Lanka, as well as in other countries. According to a questionnaire survey, carried out using a population sample of hundred, the distribution of *F. leucopyrus* was found to be common in the dry zone, compared to the wet zone of Sri Lanka. Most of the users are of the opinion that the best ingredients for traditional therapeutic systems can be obtained from plants grown in the dry zone. Therefore, the aim of this study is to interpret the phenetic variation and determine the phenolic composition in leaf extracts and of *F. leucopyrus* in different climatic zones in Sri Lanka.

Floral and vegetative characters of *F. leucopyrus* in fifteen localities in districts of Colombo, Kurunagala, Puttalam and Hambanthota were observed and cluster analysis was done. Leaf material collected from fifteen different localities were acid hydrolysed and extracted into ethyl acetate and ether. Ethyl acetate extracts were used to isolate flavonoid aglycones using cellulose Thin Layer Chromatography (TLC) plates in solvent 50% acetic acid. Ether extracts were used to isolate phenolic compounds using 2-Dimensional paper chromatography in solvent systems, butanol: acetic acid: water; 6:7:3 and sodium formate: formic acid: water; 10:1:200. Then colors of the spots were observed under UV (366nm) and  $R_f$  values were calculated. Then cluster analysis was carried out to determine the distribution pattern of flavonoid aglycones and phenolic compounds.

Slight phenetic variation was observed among the different population samples. Intra specific variation can be seen in the distribution of phenolics and flavonoid aglycones in leaves of *F. leucopyrus* with respect to their habitats in different climatic zones. The variation observed in the specimens of different localities in the dry zone is higher than the wet zone samples. To determine the variation in the efficacy of leaves of *F. leucopyrus* in preparation of therapeutic systems, further elucidation of phytochemicals is needed.

**Keywords : *Fluggea leucopyrus*, Phenetic Variation, Phenolics, Flavonoid Aglycones**