

## **Extraction, characterization of essential oil in leaf extract of *Toddalia asiatica***

Appuhamy H. D. C. P. M.<sup>1</sup>, Madushan P. G. L.<sup>1</sup>, Wijekoon W. M. C. D.<sup>2</sup>,  
Nalika A. P. K.<sup>3</sup>, Kalutharage N. K.<sup>3\*</sup>

<sup>1</sup>*Faculty of Science, University of Ruhuna, Matara, Sri Lanka*

<sup>2</sup>*Department of Zoology, University of Ruhuna, Matara, Sri Lanka*

<sup>3</sup>*Department of Chemistry, University of Ruhuna, Wellamadama, Matara, Sri Lanka*

Essential oil is a mixture of low molecular weight constituents that are responsible for its characteristic aroma. They are used in several industries as raw materials such as perfumes, cosmetics, food flavor and pesticides *etc.* Objective of this project was to isolate and characterize the insect repellent volatile oil of *Toddalia asiatica* leaves. Essential oil from 40 g leaves of *Toddalia asiatica* was isolated by steam distillation. After the extracting of the oil qualitative tests were carried out for the detection of functional groups present. 2,4-dinitrophenyl hydrazine test revealed that the essential oil contained carbonyl functionality. In order to determine the components present in essential oil extracted, GC-MS analysis was done. Main constituent present in essential oils are trans-ethoxy-1-butene (53%), limonene (9.8%), 3-methyl-2-butenal (4.8%), 2-methyl-2-hexene (2.5 %), caryophylline oxide (1.3 %), bis(2-ethylhexyl) phthalate (6.4 %) and other minor components by GC yield. This results shows the essential oil of leaves of *T. asiatica* contained well-known insect repellent compounds.

**Key words:** *Toddalia, essential oil, limonene, steam distillation*

**Acknowledgement:** Department of Chemistry, University of Ruhuna, Matara. AHEAD ELTA-ELSE DPs, Department of Chemistry, University of Ruhuna.

\*Corresponding author: knishantha@chem.ruh.ac.lk