

## **Positional variation of oils extracted from the stem of Ceylon Cinnamon (*Cinnamomum zeylanicum* Blume): Qualitative and Quantitative Comparison**

Wijeweera A. A.<sup>1</sup>, Hewage J. W.<sup>2\*</sup>, Wadumethrige S. H.<sup>2</sup>,  
Hettiarachchi S. R.<sup>3</sup>, Jayasinghe G. G.<sup>1</sup>

<sup>1</sup>National Cinnamon Research and Training Center, Department of Export Agriculture, Sri Lanka

<sup>2</sup>Department of Chemistry, University of Ruhuna, Sri Lanka

<sup>3</sup>Department of Chemistry, The Open University of Sri Lanka

Differences in the content and the chemical constituents of the bark oil extracted from different parts of the stem from the bottom to the top of Ceylon Cinnamon (*Cinnamomum zeylanicum* Blume) were studied. Cinnamon plants from introduced accession Sri Gamunu and common accession were used and the bark samples obtained from the apex, middle, and bottom of the stems were analyzed separately. In Sri Gamunu, both genetic and ecological factors remain constant as the plants were vegetatively cultivated at the same field located in the agro-ecological zone, IL1a (6<sup>o</sup>1.7820N<sup>o</sup>; 80<sup>o</sup>33.4990'E; 22.3 amsl.). But in the common accession, only the ecological factor remains constant as the result of cross-pollination through the seed cultivation. Two maturity stages of the plants, more than 5 years and less than 2 years, were used. Both Sri Gamunu and the common accessions did not show any significant difference in the oil content with maturity. Sri Gamunu showed a significant increase in the oil content from the bottom to the top of the stem. Apex samples had a significantly higher ( $p < 0.05$ ) bark oil content (3.62%) than the middle (3.17%), and the bottom (2.67%) parts of the stem while common accession showed no such difference from the bottom to the top of the stem. In Sri Gamunu, only cinnamyl acetate among all the chemical constituents showed a significant difference from the bottom to the top of the stem while in common accession, none of the chemical constituents significantly differed relevant to the position of the stem.

**Keywords:** *Cinnamon, common accession, introduced accession, part of stem, chemical constituents*

**Acknowledgements:** Authors thank National Science Foundation, Sri Lanka for funding under the research grant SP/CIN/2016/04 and the National Cinnamon Research & Training Center.

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