

## **Morphological, Anatomical and Biochemical Characterization of *Salacia reticulata* and *Salacia oblonga***

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The genus *Salacia* belongs to family Hippocrateaceae and consists of climbing woody plants. *S. reticulata* plays a significant role in Ayurveda medicine due to their anti-diabetic properties. However, due to depletion/overuse of *S. reticulata*, now it seems that materials of *S. oblonga* are available in open market. Moreover, due to similar appearance of these two species, it is difficult to identify them correctly. Hence, use of this species for medicinal purposes correctly is a difficult task. Therefore, this research was conducted for characterization of both *Salacia* species using morphological, anatomical and chemical characters for easy identification. For morphological characterization, characters of the leaf (maximum width, maximum length, apex, base, shape, margin, and arrangements), the stem (color, appearance, presence of lenticels and lichens), roots (color), and the fruit (fruit shape, number of seeds present in a fruit, seed size and fruit size) were used. For anatomical characters, stem sections of both species were stained and examined under light microscope. For biochemical characters, leaf, stem and roots extracts with different solvents were used for Thin Layer Chromatography (TLC) and separated compounds were detected by viewing their natural color, Iodine vapor test, Vanillin test and UV visualization. Resulted dendrograms from statistical analysis using those characters showed that these two species were separated into two clusters according to species. According to the morphological characters, root color and fruit shape can be applicable for field identification accurately. Pigmented cells in hypodermis in *S. reticulata* and specific cellular arrangements in between vascular rays in *S. oblonga* were useful for anatomical differentiation of two species. Different patterns with TLC were observed for differentiation of both species. In this context, these discoveries on morphological anatomical and chemical methods lead to accurate identification of *S. reticulata* and *S. oblonga*.

**Keywords:** Anatomical, Chemical and morphological methods, *S. oblonga*, *S. reticulata*

**Acknowledgment:** This research was funded by the Faculty of Science, University of Ruhuna (Ru/SF/RP/2014/06).

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