International Journal of Basic and Applied Biology
p-ISSN: 2349-5820, e-ISSN: 2349-5839, Volume 6, Issue 2; April-June, 2019, pp. 141-141

http://www.krishisanskriti.org/Publication.html

A Study of using Foldscope as a Tool for Preliminary Evaluation of Plant Materials

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Abstract—*Microscopy is of immense importance in the field of Pharmacognosy, for identification and detection of medicinal plant parts and adulterants in herbal preparations and crude drugs. Quality control of herbal drugs ensures safety and efficacy of the drugs used in traditional systems of medicine such as Ayurveda. Foldscope, is a lightweight, portable and durable paper microscope developed by Dr. Manu Prakash, that provides magnification from 140x-2000x. Further magnification can be achieved using the camera of a mobile phone. The present study aims to assess the use of Foldscopein identifying medicinal plant materials from which herbal preparations are routinely formulated. Structure of stomata, stomatal number, stomatal index, vein islet number, fibre length, etc. are some of the microscopic parameters that were evaluated using Foldscope in this study. Simple and efficient handling of Foldscope along with the use of mobile phone camera to capture the images served as an excellent in-field tool in this study. Foldscope was found to be an easy and efficient instrument for the analysis of the above-mentioned microscopic parameters. Further analysis is to be carried out for comprehensive evaluation of the sample. The authors are thankful to the Department of Biotechnology, Government of India for providing the Foldscopes and the Foldscope Research Grant.*

Keywords*: Foldscope, Herbal medicines, Pharmacognosy, Evaluation.*