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INTRODUCTION OF PLANT TISSUE CULTURE PRACTICAL
FOR
G. C. E. ADVANCED LEVEL SCIENCE STUDENTS

A PROJECT REPORT PRESENTED BY

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Plant tissue culture techniques are widely exploited in various aspects of applied and basic studies of plant biotechnology. They are used commercially for rapid multiplication of plant species with high economic value such as medicinal plants. In addition, plants which are tolerant to stress, pathogens, salinity, drought, diseases, herbicides and temperature can be produced by plant tissue culture techniques. Therefore, theory as well as practical knowledge of tissue culture would be great advantage in the exploitation of its applications.

In secondary schools of Sri Lanka, tissue culture lesson is a sub unit in the syllabi of the Advanced Level Agriculture and Biology subjects and concept of tissue culture is explained only by traditional classroom lessons. However, explaining of tissue culture lessons through demonstration and hands-on experiments in addition to theory classes, would definitely improve learning and understanding of the concept and further development of inquiry skills. Therefore, in the present study possibility of incorporating practical/demonstrations of laboratory procedure in plant tissue culture to Advanced Level Biology and Agriculture lessons was investigated. Before conducting tissue culture lessons and practical to Advance Level students, all the steps involved in micropropagation was studied using a valuable medicinal plant, Amukkara (*Withania somnifera*). In parallel to the laboratory study, literature survey was conducted to prepare the thesis as well as the teachers/student's guide. Secondly, with the help of knowledge acquired through literature survey and the laboratory

experiments teachers/students supplementary guide (Part II) was prepared and the teachers/students supplementary guide was used to conduct tissue culture theory and practical lessons to science A/L students of two secondary schools at Matale. Students' performances after the test revealed that in-cooperation of tissue culture practical enhance their understanding of the concept.