

**EFFECT OF SEED PROPAGATION PROTOCOL
FOR *Eucalyptus grandis***

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

By

**RANAWEERA MUDALINAYAKE CHARUNI
PRADEEPIKA RANAWEERA**

**Export Agriculture Degree Programme
Faculty of Animal Science and Export Agriculture
Uva Wellassa University of Sri Lanka**

2017

ABSTRACT

Eucalyptus grandis is one of the major and the most demanded plantation forest tree species, grown in up country areas of Sri Lanka. Though the seed propagation is the main mode of seedling production in commercial scale at present, drawbacks prevails due to difficulties in seed collection. *In vitro* propagation of *Eucalyptus grandis* can be enhanced the opportunities to produce elite, genetically stable, high productive and uniform planting materials, in commercial scale. The present study was aimed to establish a foundation to development of an efficient protocol for the micro propagation of *Eucalyptus grandis*. Seed obtained from mature surface sterilized capsules were used as the explants using a developed protocol and established under aseptic conditions. Three different tissue establishment media were used in the experiment; ½ MS (SG), ½ MS+0.5mg/L BAP (EUG) and medium contains only agar (AG). Complete Randomized Design was used with three replicates to conduct the experiment. Cultures were incubated at 25±2⁰C under LED light (12:12 hours at 500 lux). The percentage of germination and several morphological characteristics of the seedlings were recorded up to 60 days of inoculation. The results indicate that the most suitable media for *in vitro* germination of seed explants of *Eucalyptus grandis* is SG medium (½ MS) with 4.3% of germination. Continuation of further experiments with optimized conditions would help to develop a standardized protocol for *in vitro* propagation of *Eucalyptus grandis*.

Keywords: *In-vitro* germination, BAP, *Eucalyptus grandis*, ½ MS medium, Seed explants