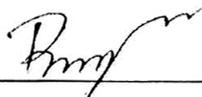


Rungarun Sumkaew 2007: *In Vitro* Seedling of *Eucalyptus camaldulensis* Dehnh.
Using Temporary Immersion System with Twin Flasks. Master of Science (Forestry).
Major Field: Silviculture, Department of Silviculture. Thesis Advisor:
Assistant Professor Ladawan Puangchit, D.Sc. 108 pages.

Micropropagation by using Temporary Immersion System (TIS) was developed for low cost production of *Eucalyptus camaldulensis* seedling. Installation of TIS with twin flasks was compared to that with two layers. The results showed that materials needed for making the containers for twin flasks are readily available at much lower cost than those needed for the two layers (5 times). Different factors, i.e. frequency and duration of nutrient solution feeding, amount of nutrient, and initial numbers of shoot were evaluated for the best new shoots formation. The results revealed that giving nutrient solution given every 8 hours for 1 minute each at the amount of 100 ml with 50 initial shoots per a set of twin flasks, gave the highest number of shoots per container (4.97 times). Furthermore, multiplication rate, rooting and transplanting of shoots grown in TIS with twin flasks were compared with other systems, i.e. semi-solid medium system, liquid medium system and TIS with two layers for a period of 4 weeks. TIS with two layers gave the highest increase of multiplication rate (5.15 times), followed by that of the TIS with twin flasks (4.75 times). For rooting and transplanting, it was found that rooting occurred on 1/6 MS supplemented with 0.1 mg/l NAA in 30 days. However, transplanting seedlings of these four systems were almost the same in survival percentage and growth. Economical analysis showed that the lowest cost per seedling was obtained using twin flasks (2.02 Baht/plant) while two layers system cost 2.44 Baht/plant. Moreover, the investment return period of TIS with twin flask was only 8 months giving the production capacity as high as 38,988 seedlings.



Student's signature



Thesis Advisor's signature

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