

**INVESTIGATION ON GROWTH PERFORMANCE OF TISSUE-  
CULTURED PLANT, *Hylocereus undatus***

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## ABSTRACT

### INVESTIGATION ON GROWTH PERFORMANCE OF TISSUE CULTURED PLANT, *Hylocereus undatus*

*Hylocereus undatus* is a valuable species of plant and has importance in many field such as in academics (research study), horticulture, economy, health, as well as food and beverages industry. Besides, this plant is popular throughout Asian countries and there has been increasing demand in the market especially for the *H. undatus* delicious fruits. Rapid mass production of this plant is required to meet the market demand and tissue culture technology has become the best option or method to improve the production rate in a shorter time it can offered compared to conventional procedure. Objectives for this study were to study the development and morphological changes of *H. undatus* by using micropropagation technique and to investigate the growth performance of *H. undatus* by using different proportion of soil media. Sterilized explant stem were excised and then was inoculated in Murashige-Skoog (MS) basal media and left to be incubated for six weeks in time. After passed the incubation period, the grown explants were proceed with acclimatization stage in which the explants of *H. undatus* were transferred and planted into four types of soil medium. The soil medium consist combination of soil and coco peat in fixed proportion or ratio. The ratios of soil to coco peat prepared for this study include 1:0 for control, 1:1 for T1, 2:1 for T2 and 1:2 for T3. The observation on the growth performance of *H. undatus* or the acclimatization process took about six weeks. The parameter used in this study was the length of stem. From this study, the result showed that the acclimatization of *H. undatus* for all treatments were successful. The soil medium or treatments that suitable for growth performance were the control and T3 soil medium. This because, at week-6 which is the last week for observation, *H. undatus* that grew in control soil medium had the highest average length of stem while T2 soil medium was the lowest. However, overall measurement of growth performance for plants in all type of soil medium had no significant difference since the P value was 0.429. In this study, in vitro regeneration of *H. undatus* was obtained through the tissue culture and the plant continues to grow in ex vitro through the acclimatization process.