

**EFFECT OF DIFFERENT LIGHT INTENSITY ON THE GROWTH OF RUBBER TREE
(*Hevea brasiliensis*) SEEDLINGS AT NURSERY**

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ABSTRACT

The plant species that has been studied in this research is rubber tree (*Hevea brasiliensis*). Rubber tree is one of the species included in commodity sector apart from oil palm in Malaysia which contributes the third largest of exports income to the country. The objective of this research is to measure the growth performances (height, collar diameter, number of leaves, surface areas of leaves) of rubber tree seedlings which are planted in different light intensities. Other than that, to determine the light intensity which is suitable for the growth of rubber tree and to measure the shoot: root mass ratio of the rubber tree seedlings which are planted with different light intensities. The effect of 4 different light intensities toward the growth rate of rubber wood seedlings (*Hevea brasiliensis*) has been studied in order to determine the light intensity suitable for the growth of rubber wood. The treatments included are without shading, 50%, 70% and 90% shading rates. This research is conducted for about 60 days and the data collected for every 5 days along the period of the study being conducted. The parameters involved in this study including height, collar diameter, number of leaves and the surface area of the leaves. The instrument that is used to measure height is a ruler while a digital vernier caliper is used to measure collar diameter and a portable leaf area meter is used to determine the surface area of leaf. While, in order to measure the shoot root ratio, a weighing scale and an oven is used to measure the mass and to dry the shoot and root of rubber tree seedlings respectively. Based on the analysis of variance (ANOVA) tested, height, diameter and the surface area of the leaves shows significant difference ($p < 0.05$), on the other hand the number of leaves shows that there is no significant difference ($p > 0.05$). Therefore, in this study, the different light intensities affect the height, collar diameter and the surface area of the leaves but the number of leaves is not affected. The correlation value for the dry mass of shoot and root is $r = 0.975$ which almost reach the value 1 which means that there is a very strong correlation between shoot and root of rubber tree seedlings. The highest shoot root ratio in this study is 1: 4.11 which performed by the rubber tree seedlings that treated with 90% rate of shading (T4). The results show that the seedlings treated with 90% rate of shading (T4) have highest growth performances in term of height, collar diameter and leaf surface area.