

ABSTRACT

The utilization of forest resources not only timber but also other minor forest products is ever continuing, not only for self consumption but also for commercial purposes. The subject matter brings about the impact on the forest conservation itself, so that the silvicultural measures are essential to carry out especially in the management of tropical rain forest regeneration. The silvicultural measures are carried out by means of planting commercial timber species. In performing the planting it is certainly supported by the matter the nursery techniques is essential to master proficiently. By mastering the silvicultural measures by means of good nursery techniques, then it will help the government by providing high quality and cheap seedlings. For providing seedlings in large amount, this is essential to exist the manipulation of various factors for achieving the expected result. The factors which is probably manipulated for red meranti (*Shorea parvifolia* Dyer) seedlings namely the light, root clipping (underground root pruning). In relation with the above mentioned matter a research which is carried out with the objectives to obtain the description on the shading sensitivity, root clipping of red meranti species and also the growth response and the quality.

The research method is conducted by means of planting two-months old red meranti seedling in the shading condition namely : 75%, 50%, 25%, and open area and the time of root clipping namely : 2 months, 3 months, and 4 months, and also the length of root clipping 6 cm, 7 cm from the root base (root neck) and without clipping. The research design is the completely randomized design with the factorial experiment pattern. The parameters which are measured namely seedling height, seedling diameter, the number of seedling leaves, photosynthesis rate, respiration rate, the amount of leaf chlorophyll, light compensation point, seedling dry-weight, top-root ratio and seedling water content.

The result indicates the positive response to the light intensity up to certain limit. The maximum growth of seedling stem diameter is achieved at the shading 75%. The maximum increase of seedling leaves number is achieved at the shading 25%. The amount of leaves chlorophyll attains the maximum at the shading 75%. The photosynthesis rate and the respiration rate indicate the increase of linear comparative with the increase of light intensity, infact high productivity is found at the shading 50%. The light compensation point of the species studied, lies in the range of 2000 - 3400 foot candle.

In the whole, the maximum growth rate of the species studied happen in the shading range of 25% - 75% of full light exposure.

The 4 month time limit of root clipping give great effect than 3 month and 2 month time limit.

The 7 cm length root clipping give good effect than the 6 cm length root clipping and without clipping.