Effectiveness of several methods of mycorrhizal inoculation and inoculum doses on growth of red meranti (*Shorea leprosula* Miq.) wildlings

Basir Achmad*

Keywords: micorhizza innoculation, wildling, red meranti, growth

Abstract

Micorrhizae have been proved to increase the growth of trees from Dipterocarpaceae family, but the research about applying several methods and inoculum levels has not been done. The purpose of this study was to determine the effective method of applying mycorrhizae inoculation and optimum levels of inoculum for the growth of red meranti wildlings. Experimental design used was a 4 × 3 Nested Randomized Design, which consisted of two factors: inoculation methods and inoculum doses nested in the inoculation methods. Inoculation methods consisted of capsules, spores, spore suspension, and mycorrhizal soil. Inoculum doses consisted of 1 capsule, 2 capsules, and 3 capsules; 15 mg spores, 20 mg spores, and 25 mg spores; 3 ml of spore suspension, 4 ml of spore suspension, and 5 ml of spore suspension; 120 g soil, 160 g soil, and 200 g soil. Total seedling used was 12 × 3 × 5 = 180 wildlings. The results showed that the method of inoculation significantly affected the increase in height; and the levels of inoculum significantly increased the diameter of wildlings. The highest height of wildlings was the wildlings provided mycorrhizae spores (3,269 cm). The highest diameter increment was reached by the wildlings treated with mycorrhizal soil 200 g (0.374 cm). Mycorrhizae spores and mycorrhizal soil are available in large quantities in nature so they are feasible to use.

*Corresponding author: basir.achmad@ulm.ac.id