

不同施肥处理对香花油茶生长动态的影响

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摘要:【目的】探究不同施肥处理对香花油茶幼苗生长动态的影响。【方法】以1年生香花油茶“义臣”扦插苗为材料,5种施肥处理分别是CK:不施肥处理、T1:0.5 g/株复合肥+0.05 g/株磷酸二氢钾、T2:1.0 g/株复合肥+0.05g/株磷酸二氢钾、T3:1.5 g/株复合肥+0.05 g/株磷酸二氢钾、T4:2.0 g/株复合肥+0.05 g/株磷酸二氢钾,通过观测不同时期香花油茶幼苗的苗高、地径生长量,分析不同施肥处理对香花油茶幼苗的苗高和地径的影响,并利用Logistics拟合不同施肥处理下香花油茶幼苗苗高和地径的年生长动态,得到Logistics方程表达式,从而求出香花油茶幼苗的生长拐点和拐点生长量。【结果】结果表明:在T3施肥处理(1.5 g/株复合肥+0.05 g/株磷酸二氢钾)下,香花油茶幼苗的苗高总增长量最大,较CK不施肥处理增长了34.05%,差异显著($P<0.05$),T2施肥处理(1.0 g/株复合肥+0.05 g/株磷酸二氢钾)的地径总增长量最大,较CK不施肥处理增长了55.56%,差异显著($P<0.05$)。5种不同施肥处理下香花油茶的苗高和地径都呈S型曲线生长。利用Logistics拟合不同施肥处理下香花油茶苗高和地径的年生长动态,决定系数 R^2 都大于0.95,方程拟合度较高,此外,各施肥处理的苗高、地径生长拐点均迟于不施肥处理,拐点生长量大于CK不施肥处理。【结论】综上,不同施肥处理可延长香花油茶苗木的快速生长期,提高苗木生长量,从而提高苗木质量。

关键词:香花油茶;施肥;生长动态;S型曲线

Effects of different fertilisation treatments on the growth dynamics of *Camellia osmantha*

Abstract: 【Objective】 To investigate the effects of different fertilisation treatments on the growth dynamics of *Camellia osmantha* seedlings. 【Methods】 Taking 1-year-old *Camellia osmantha* ‘Yichen’ cuttings as materials, five fertilisation treatments were applied: CK: no fertilisation treatment, T1: 0.5 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate, T2: 1.0 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate, T3: 1.5 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate, T4: 2.0 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate. By observing the growth of seedling height and diameter in different periods, we analysed the effects of different fertilization treatments on the seedling height and diameter of *Camellia osmantha* seedlings, and used Logistics to fit the annual growth dynamics of seedling height and diameter of *Camellia osmantha* seedlings under different fertilization treatments, and obtained the expressions of Logistics equations, so as to find out the inflection point of the *Camellia osmantha* seedlings and the inflection point of the growth amount. 【Results】 The results showed that under T3 fertilisation treatment (1.5 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate), the total growth of seedling height of scented oil tea seedlings was the greatest, which increased by 34.05% compared with that of the CK no-fertilisation treatment, and the difference was significant ($P<0.05$), and the total growth of diameter of the ground was the greatest in the T2 treatment (1.0 g/plant compound fertiliser + 0.05 g/plant potassium dihydrogen phosphate), which increased by 55.56% compared with that of the CK no-fertilisation treatment, and the difference was significant ($P<0.05$). CK without fertiliser treatment by 55.56%, the difference was significant ($P<0.05$). The

seedling height and ground diameter of *Camellia osmantha* under five different fertilisation treatments showed S-shaped curve growth. Logistics were used to fit the annual growth dynamics of seedling height and diameter under different fertilisation treatments, and the coefficient of determination R^2 was greater than 0.95, which was a good fit for the equations. In addition, the inflection point of seedling height and diameter growth of each fertilisation treatment was later than that of the no-fertilisation treatment, and the amount of inflection-point growth was greater than that of the CK no-fertilisation treatment. **【Conclusion】** In conclusion, different fertilisation treatments can prolong the rapid growth period of scented *Camellia osmantha* seedlings and increase the growth of seedlings, thus improving the quality of seedlings.

Keywords: *Camellia osmantha*; fertilisation; growth dynamics; S-curve