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林学—研究报告

不同光环境对黄栌光合生理特性及营养生长和叶色的影响

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摘要:

研究了不同光环境（相对光强分别为全光的100%、70%、40%、25%）对黄栌光合生理特性及营养生长和叶色的影响。结果表明：随着光照强度的降低，黄栌叶片的净光合速率、蒸腾速率和气孔导度均依次降低；黄栌的主枝长度和叶片数量减小；叶片面积呈现先增大后减小，70%全光下叶面积最大。在生长期，全光及高光处理下的黄栌叶片中的叶绿素含量低于中、低光照的处理，且具有显著性差异（P<0.05），较高全光下叶色为黄绿色且叶片较薄，而较低光照下叶片深绿而厚。在变色期，全光及高光处理下的黄栌叶片中的叶绿素含量逐渐降低、花青素含量逐渐增加，叶片呈现变红过程，但全光下黄栌叶片出现一定的日灼现象，而中、低光照处理时黄栌叶片基本没有花青素的积累，叶片直接由绿色变为黄色。因此，我们认为黄栌属于喜阳不耐阴植物，但考虑到全光下叶片易出现日灼现象，稍遮阴（大于70%全光）是黄栌的最适光环境。

关键词： 叶色

The Photosynthetic characteristics, vegetative growth and leaves color of Cotinus coggygria Scop. seedlings under different light environments

[2],

Abstract:

The photosynthetic characteristics, vegetative growth and leaves color of Cotinus coggygria Scop. seedlings under different light environments were studied. The conditions of 100%, 60%, 30%, and 15% of full sunlight were set up to simulate different light environments. The results showed that, as light intensity decreasing, the photosynthetic rate, transpiration rate and stomatal conductance in seedlings leaves decreased; the long of primary branches and leaf number decreased; the leaf area increased, then decreased, in 60% of full light, seedlings gained the largest leaf area. In growth period, the chlorophyll contents of seedlings leaves under all light and high light treatments were obviously lower than the leaves under middle and low light treatments, and had significant difference (P < 0.05), so the leaves of seedlings under higher light was green yellow and thin, while under lower light treatments was green and thick. In changing color period, the leaves of seedlings under all light and high light turned red with chlorophyll contents decreased and anthocyanin contents increased, but the leaves got a little sunburn under all light, the leaves of seedlings under middle and low light treatments turned yellow. We suggested the C. coggygria seedlings is a heliophilous plant, need a light enough environment and slight shade (more than 70% of full sunligh) is the most suitable environment of C. coggygria seedlings.

Keywords: leaves color

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