

研究报告

## 六种人工针叶幼林下地表苔藓植物生物量与碳贮量

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### 摘要

调查了岷江上游6种人工针叶幼林(油松林、华山松林、日本落叶松林、云杉林、油松-华山松混交林和云杉-华山松混交林)下地表苔藓植物生物量,测定了C含量并估计了林分地表苔藓植物C贮量,比较分析了它们的差异性.结果表明,6种人工针叶幼林下地表苔藓植物总生物量在 $3.11\sim 460.36\text{ kg}\cdot\text{hm}^{-2}$ 之间,而平均C含量在 $37.44\pm 0.21\%\sim 35.95\pm 0.70\%$ 之间,总C贮量在 $1.12\pm 0.03\sim 168.95\pm 0.92\text{ kg}\cdot\text{hm}^{-2}$ 之间,但在样方水平上只有云杉林地表苔藓植物生物量与其它林型间差异明显,落叶松林下C含量与其它差异明显( $P<0.05$ ).6种人工林类型中,云杉林地表苔藓植物总生物量和C贮量最高,华山松林下最低.综合分析表明,样方调查数量与布局对生物量取样精度有重要影响,岷江上游人工林下地表苔藓植物生物量与C贮量较低,林分类型与林分特征有重要影响,而疏伐、修枝等措施是改善人工密林下地表苔藓植物发育,增加生物量与C贮量的有效管理措施.

关键词 [人工林,苔藓植物生物量,碳储量,生态恢复](#)

分类号

## Biomass and carbon storage of ground bryophytes under six types of young coniferous forest plantations

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### Abstract

This paper studied the biomass and carbon storage of the ground bryophytes under young *Picea balfouriana* (P), *Pinus tabulaeformis* (Y), *Pinus armandii* (H), *Larix kaempferi* (L), *Picea balfouriana*-*Pinus tabulaeformis* (P-Y), and *Pinus tabulaeformis*-*Pinus armandii* (Y-H) forest plantations in the upper reach of Minjiang River, Sichuan Province. The results showed that total biomass and carbon storage of ground bryophytes were relatively low, being  $3.11\sim 460.36\text{ kg}\cdot\text{hm}^{-2}$  and  $1.12\pm 0.03\sim 168.95\pm 0.92\text{ kg}\cdot\text{hm}^{-2}$ , respectively. On plot level, only the bryophyte biomass between forest P and others, and the carbon storage between forest L and others were significantly different. The ground bryophyte had the highest biomass and carbon storage under forest P, while the lowest ones under forest H. Comprehensive analysis suggested that forest type and its structural feature might be the important factors determining the biomass and carbon storage of ground bryophytes, and thinning was an important measure to improve ground bryophyte growth and biomass production.

**Key words** [Artificial forest](#) [Bryophyte biomass](#) [Carbon storage](#) [Ecological restoration](#)

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