

研究报告

半湿润常绿阔叶林次生演替阶段植物多样性和群落结构特征

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摘要 以飒马场不同次生演替阶段的半湿润常绿阔叶林为对象,测定物种丰富度、群落数量特征指标,分析植物多样性与群落结构特征之间的关系.结果表明,随着植物群落演替,物种丰富度不断增加,物种丰富度最高演替阶段的乔木层物种达到24个;植物多样性与植物个体密度间呈正相关关系;乔木层植物个体平均高与植物多样性间呈负相关关系;群落郁闭度和胸高断面积与植物多样性之间则呈对数函数关系.植物多样性与优势种个体密度和群落地上部分现存量间未呈现一致性规律.植物种-个体数间呈幂函数关系.随着植物多样性增加,种间竞争加剧,每个植物种为了维持临界最低种群,可能采取最大种群策略,导致群落植物个体数增加,密度增大,从而改变了群落结构特征.

关键词 [植物多样性](#) [生态系统功能](#) [次生演替阶段](#) [群落结构特征](#)

分类号

Plant biodiversity and community structure of semi-humid evergreen broadleaved forests at different secondary succession stages

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Abstract

To analyze the relationships between plant diversity and community structure of semi-humid evergreen broadleaved forests at different secondary succession stage in the Samachang area of Yunnan Province, some numeral indices were tested, and the results showed that the plant diversity increased gradually with succession, and the species number reached 24 at the latest succession stage. There was a positive linear correlation between plant individual density and species diversity, which could be described by $y=506.99x+554.56$. A negative correlation was observed between the average height of plant individuals and plant species diversity, and the equation $y=-0.3862x+11.406$ could describe it well. The crown density and basal area increased in logarithm with plant species diversity, and the two equations $y=21.756\ln x + 11.607$ and $y=7.4028\ln x + 9.6198$ could describe the relations. No regular patterns were observed for the changes of aboveground biomass and plant individual density with plant species diversity. The relations of plant species with plant individual number could also be described by negative power function. Plant competition was intensified with plant species diversity, and each plant species might take the strategy to conserve its greatest population, and to avoid decreasing to less than its critical population, which led to a high individual density, and might change the structural character of the community.

Key words

[Plant diversity](#) [Ecosystem function](#) [Secondary succession stage](#) [Structural character of community](#)

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