

研究论文

# 天童常绿阔叶林不同演替阶段常见种叶片N、P化学计量学特征

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**摘要** 对天童常绿阔叶林5个演替阶段的13个种类24个植物个体叶片的N、P化学计量学的研究表明: (1) 各演替阶段植物叶片的N、P含量变异较大, N含量的值在6.49~14.69 mg g<sup>-1</sup>之间, P含量的值在0.66~1.13 mg g<sup>-1</sup>之间, 叶片的N: P值在7.45~16.38之间; 总体平均值N为9.43mg g<sup>-1</sup>, P为0.86 mg g<sup>-1</sup>, N: P为11.17; (2) 演替后期的叶片N含量和N: P比高于演替前期, 叶片N含量的变化趋势与N: P比的变化趋势协同性较好, N: P的变化趋势能较好地反映不同演替阶段的群落变化特征; (3) 叶片N: P可以作为植物和演替阶段的限制性营养元素的指标, 不同演替阶段的群落生长基本上均是受N而不是受P的限制; 演替各阶段绝大多数物种新生叶的N: P都小于成熟的营养叶的N: P, 两者均受N元素的限制, 且氮素对新叶的限制性更强, 表明新叶容易缺乏氮素而发育不良。

**关键词** [常绿阔叶林](#); [演替阶段](#); [叶片N: P化学计量学](#); [限制性营养元素](#)

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## Leaf N and P Stoichiometry of common species in successional stages of the evergreen broad-leaved forest in Tiantong National Forest Park, Zhejiang Province, China

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**Abstract** The leaf N and P stoichiometry of 24 individuals of 13 plant taxa in five various successional stages of the evergreen broad-leaved forest in Tiantong National Forest Park, Zhejiang Province was studied. The results showed that (1) leaf N, P and N: P mass ratio exhibited large variations, ranging from 6.49 to 14.69 mg g<sup>-1</sup> for N, from 0.66 to 1.13 mg g<sup>-1</sup> for P, and from 7.45 to 16.38 for N: P ratio. The arithmetic means for all species were 9.43 for leaf N and 0.86 mg g<sup>-1</sup> for leaf P, and 11.17 for N: P, respectively; (2) Leaf N content and N: P ratio in earlier successional stages were higher than those in later successional stages, the temporal change in leaf N content corresponded well with that of leaf N: P ratio, and the change in leaf N: P ratio could be explained in terms of the characteristics of the communities in different successional stages; (3) Leaf N: P stoichiometry can be used as an ecological indicator for nutrient limitation both at the plant individual and community levels. The N: P ratio in new leaves was lower than that in mature leaves for most plant species, indicative of N-limitation but not P-limitation. New leaves more frequently suffered from N-limitation than mature leaves, and thus were subject to leaf hypogenesis in the shortage of N nutrient supply.

**Key words** [evergreen broad-leaved forest](#), [successional stage](#), [leaf N and P stoichiometry](#), [limitative nutrient](#)

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