

林学—研究报告

元阳梯田周围不同群落P元素背景值特征及其元素循环

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摘要:

为了研究元阳梯田周围森林群落P元素背景值特征状况, 了解不同林木类型P元素循环情况及其对生态系统的影响, 笔者研究元阳梯田中心区周边9个不同森林群落优势种叶片、土壤以及枯落物中P元素含量及各群落元素循环系数及特征。结果表明: (1) 在优势种叶片中, P元素含量的平均值为1.69 g/kg, 范围为1.05~3.00 g/kg, 在枯落物中, P元素含量的平均值为1.51 g/kg, 范围为0.76~2.33 g/kg, 叶片和枯落物N含量平均值依次为: 人工林茶园>阔叶林>针叶林。(2) 土壤全P含量平均值在0~20 cm和20~40 cm分别为0.72、0.38 g/kg; 速效P含量平均值为3.50 mg/kg (0~20 cm) 和2.62 mg/kg (20~40 cm)。表层土P含量为: 阔叶林>人工林茶园>针叶林。(3) 植物叶富集系数的平均值为2.63, 枯落物存留系数的平均值为1.06, 归还土壤系数的平均值为2.46。3种循环系数大小为: 富集系数>归还土壤系数>存留系数。存留系数和归还土壤系数为阔叶林最大, 富集系数针叶林最大。

关键词: 元素循环

Characteristics of P Element Background Value and Element Cycling in Forests Communities around Yuanyang Terrace

Abstract:

In order to study the characteristics of P element background values, understand the P element cycling and its impact on the ecosystem in different forest types around Yuanyang terrace. The content of P element in dominant species leaves, soil and litter in nine forest communities around Yuanyang terrace area were studied, circulating factors and characteristics were analyzed. The results showed that: (1) In dominant species leaves, the average content of N was 1.69 g/kg ranging from 1.05 to 3.00 g/kg with the highest in *Alnus nepalensis* D. Don leaves and the lowest in *Helilia Clivicola* W. W. Smith.. In the litters, the average content of P was 1.51 g/kg ranging from 0.76 to 2.33 g/kg with the highest in *Helilia Clivicola* W. W. Smith. and the lowest in *Clero dendrum banqei* Steud. communities. The average contents of P in three forest types were plantation>broad-leaved forest>coniferous forest. (2) The average content of total P in 0-20 cm and 20-40 cm soil layers was 0.72 and 0.38 g/kg; The average soil available P contents were 3.50 mg/kg (0-20 cm) and 2.62 mg/kg (20-40 cm). The contents of total P and available P in 0-20 cm soil layer were higher than in 20-40 cm soil layer. P contents in surface soil in the three forest types were broad-leaved forest>plantation>coniferous forest. (3) The average enrichment factor, retention factor and coefficient of restitution of the soil were 2.63, 1.06 and 2.46. The sequence was enrichment factor of leaves>coefficient of restitution of soil>litter retention coefficient. The average restitution factor and retention factor in broad-leaved forest were high. The average enrichment factor in coniferous forest was high.

Keywords: element cycling

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