

薇甘菊入侵对中小型土壤动物群落结构特征的影响

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Impact of *Mikania micrantha* invasion on soil meso- and micro-invertebrate community structure.

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- 摘要
- 参考文献
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全文: PDF (618 KB) HTML (1 KB) 输出: BibTeX | EndNote (RIS) 背景资料

摘要 薇甘菊是菊科假泽兰属的恶性杂草, 在我国华南地区已成功入侵并造成严重危害. 为了解薇甘菊入侵对土壤动物的影响效应, 采用野外样地试验法对广州市火炉山森林公园薇甘菊入侵群落的土壤动物进行了调查. 2009年4次采样共获得中小型土壤动物5206头, 隶属于4门10纲19类, 其中线虫类为优势类群, 蛴螬目、弹尾目和轮虫是常见类群. 薇甘菊入侵地中小型土壤动物群落结构特征发生了改变, 与其他样区相比, 入侵区中小型土壤动物的总个体数以及线虫类、蛴螬目的个体数显著增加, 但中小型土壤动物类群数的变化不明显; 在群落多样性方面, 薇甘菊入侵区土壤动物群落的密度-类群指数显著提高, 物种丰富度、优势度指数亦有所上升, 但差异不明显, 而均匀度、Shannon指数趋于下降; 在群落相似性方面, 薇甘菊入侵区与群落交错区的相似程度较高, 与土著植物区的相似程度较低. 薇甘菊入侵所引起的局部气候环境、凋落物、根系分泌物与土壤理化性质的变化可能是造成中小型土壤动物群落结构特征改变的主要原因.

关键词: 薇甘菊 生物入侵 中小型土壤动物 群落结构

Abstract: *Mikania micrantha*, a notorious exotic weed of Asteraceae family, has invaded successfully in southern China, and caused serious damages to native ecosystems. In this paper, a field survey was conducted in the Huolushan Forest Park of Guangzhou, China, aimed to understand the impact of *M. micrantha* invasion on the soil meso- and micro-invertebrate community. Three sampling sites were installed, including *M. micrantha*-invaded site, ecotone, and native vegetation site. Through four samplings in 2009, a total of 5206 soil meso- and micro-invertebrate individuals were collected, belonging to 4 phyla, 10 classes, and 19 orders, among which, Nematoda was the dominant group, and Acarina, Collembolan, and Rotifera were the common groups. *M. micrantha* invasion altered the characteristics of soil meso- and micro-invertebrate community structure. Compared with those at the other two sampling sites, the numbers of total individuals, Nematoda, and Acarina at *M. micrantha*-invaded site increased significantly, but the groups of soil meso- and micro-invertebrates had less change. At *M. micrantha*-invaded site, the density-group index (*DG*) of soil meso- and micro-invertebrates was significantly higher, Margalef richness index (*D*) and Simpson dominance index (*C*) tended to ascend, but Pielou evenness index (*E*) and Shannon index (*H'*) tended to descend. The similarity coefficient of soil meso- and micro-invertebrate community between *M. micrantha*-invaded site and ecotone was higher than that between *M. micrantha*-invaded site and native vegetation site. The changes of local climate conditions, plant litters, root secretions, and soil physical-chemical properties caused by *M. micrantha* invasion could be the major contributing factors that altered the community structure of soil meso- and micro-invertebrates at *M. micrantha*-invaded site.

Key words: *Mikania micrantha* bio-invasion soil meso- and micro-invertebrate community structure

引用本文:

. 薇甘菊入侵对中小型土壤动物群落结构特征的影响[J]. 应用生态学报, 2011, 22(07): 1863-1870.

. Impact of *Mikania micrantha* invasion on soil meso- and micro-invertebrate community structure.[J]. Chinese Journal of Applied Ecology, 2011, 22(07): 1863-1870.

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[1] 史立君, 刁志凯, 刘润进. 城市生态系统中AM真菌侵染与群落结构特征[J]. 应用生态学报, 2011, 22(07): 1939-1943.

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