

四川紫色土丘陵区不同植物篱类型蜘蛛群落结构

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Spider Community Structures in Different Types of Hedgerows in the Purple Soil Hilly Areas of Sichuan Basin

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摘要

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摘要 于2006—2007年冬小麦和夏玉米生长季采用直接观察法对四川紫色土丘陵区香根草、紫穗槐、蓼草和苜蓿4种植物篱类型蜘蛛的群落结构及多样性进行调查。结果表明, 2006年共发现蜘蛛3074头, 分别隶属于16科48种, 其中狼蛛科、跳蛛科和球腹蛛科为优势科; 2007年共发现蜘蛛3233头, 分别隶属于14科51种, 其中狼蛛科和跳蛛科为优势科。在2006和2007年小麦和玉米生长季, 不同植物篱类型蜘蛛个体数的季节性动态变化规律基本相同, 蜘蛛个体数均在小麦或玉米收获后达到高峰, 收获前后相比差异均达显著水平 ($P < 0.05$); 不同植物篱类型间蜘蛛个体数、物种丰富度、Shannon-Wiener多样性指数 (H') 均存在显著差异。香根草、蓼草和苜蓿篱类型蜘蛛个体数、物种丰富度和 H' 值在绝大多数情况下显著高于紫穗槐。Jaccard相似性系数表明香根草、蓼草与苜蓿篱类型间的相似程度较高, 香根草、蓼草和苜蓿与紫穗槐篱类型间相似程度较低, 表明植被结构对蜘蛛群落结构有明显影响。就保护蜘蛛而言, 草本植物篱比灌木植物篱更重要, 且丛生型草本植物篱比其他草本结构植物篱能维持更高的蜘蛛多样性。

关键词: 蜘蛛 群落结构 多样性 植物篱 紫色土 丘陵区

Abstract: Structures and diversities of spider communities in four different types of hedgerows, such as *Amorpha fruticosa*, *Vetiveria zizanioides*, *Eulaliopsis binata* and *Medicago sativa*, were investigated using the method of direct visual observation during the winter wheat and summer maize growing seasons from April 2006 to September 2007 in the purple soil hilly areas of Sichuan Basin. Results show that in 2006, a total of 3 074 spider individuals under 48 genera, 16 families were found with Lycosidae, Salticidae and Theridiidae being the dominated families, and in 2007 a total of 3233 spider individuals under 51 genera, 14 families were caught, with Lycosidae and Salticidae being the dominated families. During the wheat and maize growing seasons in 2006 and 2007, spiders in different types of hedgerows followed a basically similar trend in variation of the number of individuals, which peaked after wheat or maize was harvested; the number of spider individuals was significantly greater after the harvest than before the harvest. Significant differences were found between hedgerows in number of individuals, species richness and Shannon-Wiener diversity index H' of spiders. The hedgerows of *A.fruticosa*, *E.binata* and *M.sativa* were higher than that of *V.zizanioides* in all the three indices. The Jaccard coefficients of the four types of hedgerows showed that the spider communities in the hedgerows of *A.fruticosa*, *E.binata* and *M.sativa* were quite high in similarity, but quite different from that in the hedgerow of *V.zizanioides*, which suggests that vegetation structure has a significant impact on structure of the spider community. Grassy hedgerows provide a better shelter for spiders than shrubby hedgerows, and spiders in the hedgerow of tussock are higher in diversity than those in other types of grass hedgerows.

Keywords: spider community structure diversity hedgerow purple soil hilly area

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