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宁夏毛乌素沙地3种常用固沙植物种群点格局分析

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Point patterns of Colonies of Three Common Sand-Binding Plants in the Mu Us Sandy Land

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摘要 在宁夏盐池毛乌素沙地选取50 m × 50 m规格的典型无明显结皮的固定沙地各1块，应用Ripley ' s K函数的双变量点格局分析方法，对飞播条件下混播区油蒿（Artemisia ordosica）、羊柴（Hedysarum laeve）和花棒（Hedysarum scoparium）3种常用治沙植物种内和种间的空间关联性进行了研究。结果表明，3种飞播植物在不同的演替阶段基本上以集群分布为主要特征，在尺度为0 ~ 25 m 范围内，单种分布格局均出现了最大集聚强度。如果实施单独飞播，油蒿密度不宜过高，以集聚强度高的集群分布形式为最佳，羊柴以集聚强度低的集群分布形式为最佳，花棒由于其散生的特性而不适合单独飞播。油蒿和羊柴之间空间关联性呈显著负相关关系，故油蒿和羊柴不适合大面积高密度混播，但是可将油蒿飞播到有大花棒生长的沙地中。

关键词： 毛乌素 飞播种植 空间点格局 相关关系 油蒿 羊柴 花棒

Abstract： Artemisia ordosica, Hedysarum laeve and Hedysarum scoparium are three common sand-binders in North China, and are usually air-seeded in mixture. Distribution patterns of colonies of the three aerial-seeding plants were studied to explore intra-species and interspecies correlation, with the aim of providing a theoretical basis for future aerial seeding in the Mu Us Sandy Land. Two 50 m × 50 m typical samples plots different in aerial seeding time were selected as research subjects in the Mu Us Sandy Land, Ningxia. Ripley ' s K function bivariate point pattern analysis method was applied to finding spatial correlation between the plants. Results show that A. ordosica, when seeded in monospecies, is better off if seeded in clusters and controlled in quantity. Seeds density of H. laeve should be controlled in aerial seeding. Usually in scattered distribution, H. scoparium should be seeded in mixture with others. H. laeve and H. scoparium can be seeded together, with the former as the mainstay. Obvious negative correlation was found between A. ordosica and H. laeve, so they are not suitable for mixed seeding. Neither are A. ordosica and H. scoparium.

Keywords： Mu Us aerial seeding spatial point pattern correlation Artemisia ordosica Hedysarum laeve Hedysarum scoparium

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