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研究论文

# 樟子松（*Pinus svlvestris var. mongolica*）人工群落生活史型谱

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摘要 以东北林业大学植物园内的樟子松人工群落为研究对象，应用主成分分析方法在对群落内不同种的生活史型进行划分的基础上，对松科樟子松和白扦、槭树科糖槭、豆科紫穗槐、木犀科暴马丁香、蔷薇科毛果绣线菊和托盘、红豆杉科东北红豆杉、菊科飞廉和线叶旋覆花、禾本科扁穗草、罂粟科白屈菜、唇形科夏至草、十字花科荠菜14种植物生活史型及谱特征进行了定量化分析，以此为依据对群落演替和健康水平进行评价的可行性进行了探讨。结果发现此群落中主林层植物（樟子松和白扦）营养生长（Vegetation growth, V）达到46%，有性生长（Sexual growth, S）在35%，无性生长（Clone growth, C）约为19%；演替层植物（糖槭、紫穗槐、暴马丁香、毛果绣线菊、托盘和东北红豆杉）营养生长超过50%，无性生长略高于有性生长；草本层植物（飞廉、扁穗草、线叶旋覆花、白屈菜、夏至草和荠菜）营养生长接近于47%，有性生长只比营养生长少了4%，无性生长只占到11%。这些发现说明了主林层的生活史型是以营养生长为主的VS过渡生活史型，演替层植物应为V生活史型而草本植物为VS过渡类型。群落的生活史型是$V_{0.49}S_{0.33}C_{0.18}$，属于VS过渡生活史型，在样地调查的14种植物中，生活史型大部分以营养为主，综合评价此群落处于以营养生长为主(49%)的健康群落水平，此群落中有性生长占总生活史型得分的33%，有向有性生长发展的趋势，但在一段时间内该群落应为稳定群落。

关键词 樟子松；群落；生活史型谱；生活史型；群落演替

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# The classification of life cycle form spectrum of artificial community of *Pinus svlvestris* var. mongolica

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**Abstract** The artificial community of *Pinus svlvestris* var. mongolica in the botanical garden of Northeast Forestry University was studied. The plant life cycle form of different plants from this community including *Pinus svlvestris* var. *mongolica*, *Picea meyeri*, *Acer negundo*, Amorpha fruticosa, *Syringa reticulate*, *Spiraea trichocarpa*, *Rubus crataegifolius*, *Taxus cuspidata* *Carduus crispus*, *Brylkinia caudate*, *Chelidonium majus*, *Inula linearifolia*, *Lagopsis supine* and *Capsella bursa-pastoris* were classified by PCA (principal component analysis) method. Based on this mathematical classification, the succession status and health condition of this community were assessed. For the canopy layer plants (*Pinus svlvestris* var. *mongolica* and *Picea meyeri*), the vegetative growth (V) accounted for 46%, the sexual growth (S) accounted for 35%, while the clone growth (C) accounted for 19%. Succession layer plants (*Acer negundo*, *Amorpha fruticosa*, *Syringa reticulate*, *Spiraea trichocarpa*, *Rubus crataegifolius* and *Taxus cuspidata*), V accounted for over 50%, and C accounted for a little higher than the S. Herbaceous layer plants (*Carduus crispus*, *Brylkinia caudate*, *Chelidonium majus*, *Inula linearifolia*, *Lagopsis supine* and *Capsella bursa-pastoris*), V accounted for nearly 47%, which was only 4% higher than that of S, while C only accounted for 11%. These findings showed the plant life cycle form of canopy layer plants and herbaceous layer plants were VS transition type with V form as the main type, while the succession layer plants were V form. At the viewpoint of community, the life cycle form can be described as $V_{0.49}S_{0.33}C_{0.18}$, a typical VS transition type, which indicates th

at most of the species studied in this community are in a healthy status with the V form. Moreove
r, the relative high (33%) percentage in the S form indicates that the community also tends to sexu
al reproduction, but it will be steady within a period of time.

**Key words** *Pinus* *svlvestris* var. *mongolica* _ community _ spectrum of plant l
ife cycle form _ plant life cycle form _ community succession

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