

Research Trends and Results

Study on Greening Method with Native Grass Species

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1. Introduction

For bare ground formed in public works in roads, parks, rivers, etc., early greening of the ground is required due to prevention of corrosion, consideration for peripheral environment and landscape, etc., and exotic grass is mainly used for greening because of reasonable cost and ease of procurement.

Under the Invasive Alien Species Law and other relevant laws, consideration is also required for local ecosystem when using greening plants in public works. In recent years, native plants, such as Japanese pampas grass, are used in part, but native plants of foreign origin (Chinese silver grass, etc.) are actually used, and there is a concern about genetic disturbance with the group of plants growing in Japan.

		Local origin	Genotype domestic origin	Foreign origin
Natural distribution	Domestic only or abroad	Local greening plants	Native greening plants	Native greening plants (of foreign origin)
	Only overseas	-	-	Exotic greening plants

Figure. Positioning of Greening Plants
 (Fiscal 2006 Investigation Report by the Ministry of the Environment, the Ministry of Agriculture, Forestry, and Fishery, and the Ministry of Land, Infrastructure and Transport)

2. Purpose of Research

The National Institute for Land and Infrastructure Management (NILIM) has been studying greening methods considering for the maintenance of local ecosystem, such as works for using surface soil, promoting natural invasion, and using local seeds and seedlings, and one of the issues in conducting such works is how to procure local greening plants. Therefore, we have prepared a list of local greening plants for selecting desirable species and aim to develop methods for project owners to collect / produce species that are hard to be supplied by market production, in a simple and easy manner independence or in cooperation with local community.

3. List of local greening plants

We identified appearing grass species in the secondary glassfields (Japanese pampas grass type grassland, zoysia-type grassland, etc.) and the communities of floor in secondary forests, which constitute good vegetation in the Kanto Region, and prepared a list of local greening plants by organizing the information on whether listed in the Red List, admirability such as beauty of flowers, cultural values such as season words, growth characteristic, and appearance record in works for promoting natural invasion, as well as basic information

including classification, natural distribution, form, reproductive ecology, flowering period, and fruiting season.

4. Seed sampling and germination test

We picked up 50 species out of the list that are confirmed in terms of appearance in multiple plant communities and are considered promising greening plants with excellence in cultural value, admirability, settlement, etc. and examined the place, timing, and method of sampling for them, and sampled seeds for 20 species out of them in the current fiscal year.

We conducted the germination test for the seeds sampled through careful selection including removal of downs and no treatment or germination treatment according to species (cold stratification).

5. Results and future development

As the result of germination test, no sprout was observed with 7 species and germination rates of the others were 1 to 63%. We plan to conduct scattering test on the seeds that sprouted to examine the possibility of seed production. In the following fiscal years, we plan to sample seeds for the remaining 30 species to conduct germination test and scattering test.

Although there are few findings about the sprout characteristics etc. of native grass species, we will accumulate data and promote use thereof for greening.



Photo 1. Bagging and seed sampling



Photo 2. Germination test