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Conifers in landscaping – potentials and problems

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Exotic conifer species are used in urban landscaping to enrich the limited number of native local taxa available. Many of these widespread species, forms and varieties have been selected for central European conditions and are thus well adapted to more favourable environments. Often the use of southern exotic origins leads to premature renewal of conifer plantations in the Finnish climate. Indigenous conifer species, cultivars and forms and local seed sources of exotic conifer species should thus be selected and tested for hardiness in Nordic urban environments and landscaping.

Keywords: native, exotic, conifer species, cultivar, urban environment, landscaping, selection program

Introduction

Many exotic conifer species and their various origins are already planted in forestry collections and stands of the Finnish Forest Research Institute and Mustila Arboretum, Elimäki (Silander & al. 2000). Interesting selection material could also be found from other collections, plantations, smaller arboreta or even from city parks. Most of the forms of native conifer species have been found and recorded in registers in early stage of forest tree selection work (Oskarsson & Nikkanen 1999). Many exotic forestry seed sources and native conifer forms could directly, without any further selection, be used for landscaping purposes (Silander & al. 2000, Oskarsson & Nikkanen 2001).

Sæbo & al. (2005) made a review of procedures in urban tree selection. Only limited attention has been paid to conifers. An ideal conifer tree species should have good overall adaptation to local climate and have reasonable tolerance to urban environments and stresses. Finally a tested conifer accession should also show a large phenotypic plasticity over a range of different conditions. Pragmatic selection programs could be the cheapest mean of utilising plant materials already in plantations and production (Sæbo & al. 2005).

Reduced size, slow growth habit combined with attractive appearance – traits for urban conifers

Many of the forms and varieties of Scots pine (*Pinus sylvestris*), Norway spruce (*Picea abies*), common juniper (*Juniperus communis*) and common yew (*Taxus baccata*) are already well described in the literature. (Gelderen & Hoye Smith 1997, Hillier & Coombes 2007, Krüssmann 1983). There are only limited statistics available on the use of conifer taxa in urban green areas in Finland. Customer based information of the most desired forms of conifers and their traits would also be valuable for future selection work.

Several of these forms of conifers recently found from nature had their early parallels in plant nurseries already in the 19th century. Some of these old garden varieties are even today in nursery production or planted in city parks. One of the oldest conifer cultivars is *Picea abies* ‘Clanbrassiliana’. It was originally discovered in Northern Ireland on Lord Clanbrasil’s Estate around 1790. It is a very slow growing bush. In the dormant season it is conspicuous by its virtue of brown winter buds and small branchlets that vary in vigour (Hillier & Coombes 2007). Many spruce forms, for example, nearly similar to this description could still be awaiting discovery in our forests.



Fig. 1. Cultivars of Norway spruce (*Picea abies*), common juniper (*Juniperus communis*) and thuja (*Thuja occidentalis*) with native Scots pines (*Pinus sylvestris*) in a conifer plantation of Sapokka Park in Kotka, Southern Finland. (Photo: Juha Raisio 28.8.2008)

In the future private and public urban gardens will tend to be smaller, this is one of the main tendencies in urban landscaping. The most obvious need will be for dwarf conifers as well as semi high forms and cultivars (figs. 1 and 2). A restrained habit resulting from genetic

modification of many conifers will also be of great value also in city parks. Slow growth and reduced size combined with special appearance, for example a columnar form, in many cases makes for less pruning and saved resources in later maintenance work. In these challenging days of climate change, the need to broaden the genetic base of planted tree and shrub taxa in urban environments should also be kept in mind.



Fig. 2. Columnar and carpet forming cultivars of common juniper (*Juniperus communis*) in Sapokka, Kotka. (Photo: Juha Raisio)

New conifer cultivars for urban use – an initiative of a special selection program has been taken

Central European plant nurseries have climatic advantages and longer traditions in conifer plant production than their Finnish counterparts. Much of the conifer plant material used in urban areas in Finland originates from abroad. A number of well tested hardy conifer forms and varieties could be beneficial for local production. For example, the Swedish ‘E-planta -system’ of broadleaved trees and shrubs has been some kind of success story for the Swedish plant nursery business.

The initiative for a special Finnish program for evaluating and selecting hardy conifer material for urban use has already been taken. The program will continue by selecting a limited number of new conifer forms and cultivars for immediate nursery propagation and some (4-5) new urban conifer arboreta should also be established. A broad number of conifer taxa planted in different urban environments could serve as long term base for future selection and breeding efforts made in co-operation with Finnish Forest Research Institute, tree nurseries and participating cities.

References:

- Gelderen, van D.M. & Hoey Smith van J.R.R. 1996. Conifers. The Illustrated Encyclopedia 1-2. Timber Press. 706p.
- Hillier, J. & Coombes, A. (eds.). 2007. The Hillier Manual of Trees and Shrubs. Hillier Nurseries. David & Charles. 512p.
- Krüssmann, G. 1983. Handbuch der Nadelgehölze. 2. Aufl. Berlin-Hamburg. Parey. 396p.
- Oskarsson, O. & Nikkanen, T. 2001. Metsäpuiden erikoismuotoja kultakuusesta luutakoivuun. Metsäntutkimuslaitoksen tiedonantoja 670. 54p.
- Oskarsson, O. & Nikkanen, T. 1999. Säregna former av skogsträd från guldgran till kvastbjörk. Skogsforskningsinstitutets meddelanden 740. 54p.
- Sæbo, A, Borzan, Z., Ducatillion, C., Hatzistathis, A., Lagerström, T., Supuka, J., Garcia-Valdecanthos, J.L., Rego, F. & Slycken Van J. 2005. The selection of plant materials for street trees, park trees and urban woodland. In: Konijnendijk, C.C., Nilsson, C., Randrup, T., & Schipperijn, J. (eds.) Urban Forests and Trees. Springer. pp 257-280.
- Silander, V., Lehtonen, J. & Nikkanen, T. 2000. Ulkomaisten havupuulajien menestyminen Etelä-Suomessa. Performance of exotic conifers in Southern Finland (summary in english). Metsäntutkimuslaitoksen tiedonantoja 787. 127p.