HANS EM
FACULTY OF FOREST SCIENCES
LANDSCAPE ARCHITECTURE AND
ENVIRONMENTAL ENGINEERING

Collection of experiences from 25 years work on seed propagation of allochthonous dendroflora at the Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering in Skopje and the surrpoundings

Dana Dina Kolevska[1]*, Anastazija Dimitrova[1], Viktorija Brndevska Stipanović[1]

[1] Ss. Cyril and Methodius University in Skopje, Hans Em Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering, Skopje, North Macedonia

* Corresponding author: dkolevska@sf.ukim.edu.mk

Abstract:

Various efforts in the past decades have contributed for a large variety of allochthonous tree species to become a part of the urban and suburban landscape in Skopje. Of more than 200 registered allochthonous species in the urban and suburban green areas of the city of Skopje, we propagated from seed 65 species, of which 19 coniferous and 46 broadleaved, and subsequently analysed the attributes of their generative propagation potential. This paper summarizes 25 years' experience in generative propagation of allochthonous species at the „Hans Em" Faculty of Forest Sciences, Landscape Architecture and Environmental Engineering (HEF) in Skopje, R. of North Macedonia. The collected cones, fruits or seeds were processed to obtain sawing reproductive material. According to the quantity of the collected material and seeds/fruits characteristics, the quality features of the seeds were examined (seed germination rate or viability, seed purity). Prior sawing, according to species dormancy characteristics, different pre-sowing treatments were performed, e.g., pre-soaking in cold water; hydro-thermal procedure; pre-soaking in warm water; maceration in hydrogen chloride; and seed cold stratification. The seeds were sawn in the nurseries of the HEF and in some nurseries of the PE National forests, in containers or in soil. Selection of the nurseries for the seedling production was made in terms with the ecological conditions, favourable for the certain species. One-year old seedling were measured for the shoot height (SH) and root collar diameter (RCD). Seeds germination/viability rate varies in wide range. Seedlings features also vary, depending mostly on nursery technology (bare root and container seedlings) and skills of the nursery stuff. Largest differences in seedlings SH and RDC were recorded within the broadleaved bare root seedlings (e.g. in black locust up to 1000%), while in coniferous species the differences were not of such high significance. Generally, one-year old coniferous seedlings achieved better results in containers, while seedlings of broadleaved species in soil. These results, achieved during two-and-half decades, demonstrate that urban and suburban green areas in

the city of Skopje can provide reproductive material for nursery production of species both for ornamental and reforestation purpose. Thus, further optimization as well as research regarding most suitable techniques for generative propagation is needed.

Keywords: allochthonous species; generative propagation; reproductive material quality; seedlings quality