

COST Action FP1202

Strengthening conservation: a key issue for adaptation of marginal/peripheral populations of forest trees to climate change in Europe (MaP-FGR)

Topic:

Improving genetic, demographic and biological knowledge in an endemic conifer, *Picea omorika*

Applicant:

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REPORT ON THE SHORT-TERM-SCIENTIFIC-MISSION (STSM)

In the frame of the STSM within the COST Action FP1202 - MaP-FGR, I visited dr. Vendramin's lab at CNR, Florence, Italy, in a period from 7 to 31 October 2013.

The purpose of my visit was to continue work on an endemic conifer, *Picea omorika* (Panć.) Purk.), jointly with dr Vendramin and his group in order to improve genetic, demographic and biological knowledge in this species for ensuring its long-term survival in terms of global climate change.

During the visit, I was working in the molecular laboratory, I analyzed obtained data utilizing recently developed methods, and discussed with dr Vendramin not only about obtained results which will be published in relevant high-impact peer-review journals but also about further collaboration on *Picea omorika* and other forest tree species.

The work in molecular laboratory comprised DNA extraction from 96 individuals, optimization of protocols for multiplexing of 5 nuclear EST-SSRs amplified previously in 900 individuals, analysis of 300 individuals with these molecular markers and harmonization of previous data set (genetic profiles of 900 individuals analyzed with these 5 EST-SSRs) with newly obtained data set. In addition, a mitochondrial locus was PCR amplified in 300 individuals in order to assess variability in a copy number of 34 bp minisatellite.

Data analysis comprised scoring of alleles utilizing GeneMarker, and preliminary data analysis with ARLEQUIN, STRUCTURE and InStruct.

The detection of new alleles at EST-SSR loci in 300 newly collected individuals as compared to 900 already analyzed individuals supports the view that further sampling is necessary. In addition, analysis of available individuals with chloroplast microsatellites is required for better insights into population dynamics of studied species. In agreement with dr Vendramin, these activities will be performed during the following year.

Available results will be published in relevant high-impact peer-review journals.

Dr Vendramin and I discussed about further collaboration on *Picea omorika* which will comprise analysis of genes responsible for adaptive traits related with flushing, as well as on potential joint projects on other tree species. In that way, we set the ground for a long-term collaboration between CNR and IMGGE.

Finally, I would like to express my personal satisfaction regarding this visit, and to stress that I am very pleased to continue collaboration with dr Vendramin and his group.

Belgrade, 10.11.2013

dr Jelena Aleksić

