Poster Abstract - C.68

GENETIC VARIABILITY AND IDENTIFICATION OF REGIONS OF PROVENANCE IN SCOTS PINE

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In recent years, the need of forest seeds has dramatically increased, also due to rules issued by European Community aimed at increasing and improving the forest coverage. In Italy, however, the available seeds are often of poor quality and sometimes their origin is unknown. The need of an optimisation of the forest seed production is therefore clear. At the end of 2003, Italian Government has issued the act no. 386, that implements the European Council Directive 1999/105/CE, concerning the marketing of forest reproductive material. One of the most important feature of the act is the definition of Region of Provenance, that is "....*the area or group of areas subjected to sufficiently uniform ecological conditions in which stands or seed sources showing similar phenotypic or genetic characters are found....*". The identification of Regions of Provenance is therefore a basic aspect for a rational management of activities linked with forest trees propagation, including afforestation and *in situ* genetic preservation.

The purpose of this study was the evaluation of neutral DNA markers (microsatellites) as a tool to study genetic variability distribution of Scots pine (*Pinus sylvestris* L.) in Italy, and to group populations according to their genetic similarity. 16 natural ash populations, representing the locations where the species grows in Italy, were sampled and DNA was extracted from young leaves. Six microsatellite primer pairs were used to detect genetic variability. Levels of within and among populations variability were estimated and genetic differentiation was calculated. Additionally, the ecological features of the collection sites were analysed (mainly concerning climatic conditions and soil characteristics) and homogeneous regions were defined. Lastly, patterns of genetic and ecological variations were compared, allowing us to identify areas that are both ecologically and genetically homogeneous.