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Poster Abstract – A.38

SPATIAL DISTRIBUTION OF GENETIC VARIATION IN NATURAL SILVER FIR (*ABIES ALBA* MILL.) STANDS BASED ON MICROSATELLITE MARKERS

M.-T. SCARANO*,**, A. BUONAMICI***, F. SEBASTIANI***, F. PILLA*, S. REALE*, R. TOGNETTI****, G.G. VENDRAMIN*****

*) Dipartimento di Scienze Animali, Vegetali e dell'Ambiente, Università degli Studi del Molise, Via De Sanctis, 86100 Campobasso
**) Istituto di Genetica Vegetale, CNR, Corso Calatafimi 414, 90129 Palermo
***) Dipartimento di Biotecnologie Agrarie, Genxpress, Università degli Studi, Via della Lastruccia 13, 50019 Sesto Fiorentino (FI)
****) Dipartimento di Scienza e Tecnologie per l'Ambiente e il Territorio, Università degli Studi del Molise, Località Fonte Lappone, 86090 Pesche (IS)
*****) Istituto di Genetica Vegetale, CNR, Via Madonna del Piano 10, 50019 Sesto Fiorentino (FI) - giovanni.vendramin@igv.cnr.it

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The spatial distribution of alleles is described in four natural silver fir (*Abies alba* Mill.) stands located in Molise, within a large wilderness area of south-central Appennine mountains. Sampling consisted of a total of about 150 adult trees. Each tree was genotyped at six well-scorable, highly polymorphic, nuclear microsatellite loci. For the characterization of spatial genetic structures, two different statistics were used. One method is based on the multivariate autocorrelation procedure, which strengthens the spatial signal and reduces the allele to allele stochasticity and locus to locus noise, and the other one based on the '*Sp*' statistic which is less sensitive to the sampling design used and allows the comparison of spatial genetic structure (SGS) magnitude among different populations. The results show the same tendency of a family structure in the distance classes up to 20 meters in comparison with that expected for a spatially random distribution of genotypes. Spatial genetic structures are influenced by unpredictable factors such as restricted gene dispersal, microenvironmental selection, mating patterns and wind direction. Recommendations about seed collections that should cover large areas in order to prevent a preponderance of few families and a reduction of the adaptive potential of the next generation are provided.