



**Forest Research Institute
Center of Excellence PROFOREST
for Protection of Forest Resources
in Central Europe**



ANALYSIS OF MICROSATELLITE SEQUENCES IN SCOTS PINE

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PREFACE

WORKSHOP OBJECTIVES: New approaches in forest-tree genetics

The present state of knowledge regarding the genetic diversity of forest-tree species has been greatly improved with the development of the powerful research tool that the molecular markers based on DNA represent. Considered to be neutral (*i.e.* uninfluenced by environmental conditions), highly polymorphic and species-specific, DNA markers are currently being applied in the study of genetic variation, in order that the spatial distribution of gene resources might come to be better understood. Thus far, several scientific projects run within many different EU frameworks have been devoted to the study of the forest-tree genome using molecular markers as the tool. Three important research networks, *i.e.* the FAIR, BIOTECH and EUFORGEN Programmes, were launched recently with a view to scientific research on the conservation of forest genetic diversity in Europe being promoted.

The present Proceedings describe an interesting aspect of population genetics assessed using microsatellite markers, as largely discussed during the Workshop entitled "New approaches in forest-tree genetics – Analysis of microsatellite sequences in Scots pine", which was organised on 24 - 27 August 2004 by the PROFOREST Centre of Excellence at the Forest Research Institute in Warsaw, Poland.

The PROFOREST Centre of Excellence - an EU Protection of Forest Resources in Central Europe project - started up in 2003 at FRI Warsaw. The opening session of the Workshop saw PROFOREST CoE objectives and achievements presented by Professor Zbigniew Sierota (Director of FRI Warsaw) and Dr Tomasz Oszako (FRI Warsaw). In the context of the PROFOREST project, the Workshop on "New approaches in forest-tree genetics" attempted to promote international cooperation, as well as an exchange of methodologies and research techniques among scientists.

The Forest Research Institute in Warsaw has long tradition of international cooperation between different European countries. During the Workshop, the Forest Management Director of the General Directorate of Poland's State Forests Wojciech Fonder, M.Sc., presented the SF programme for the conservation of genetic resources, as well as and methods of selection applied in silvicultural management in Poland. Polish forest management is founded upon scientific research developed through a programme entitled "Genetic resource conservation and selection in silvicultural management of forest trees in

Poland". DNA-based data on the genetic diversity of forest-tree species is thus an important aspect of the selection and conservation methodology applied in Poland.

The Workshop afforded an opportunity for scientific knowledge on the newest methods applied in forest genetics to be exchanged among researchers specialised in both molecular-marker analysis and breeding, biologists and Forest policymakers. In fact, 27 participants from seven European countries (Belarus, Finland, France, Latvia, Lithuania, Poland and Slovakia) attended this meeting. The invited speakers - experts in different fields of forest science, forest management and European proposals – in turn came from France (Dr Catherine Bastien, Dr Antoine Kremer and Dr Sylvie Oddou) and Poland (Prof. Jarosław Burczyk, Wojciech Fonder, M.Sc., Dr Jolanta Wolska, and Prof. Zbigniew Sierota). The Organizing Committee of the Workshop was represented by: Prof. Jarosław Burczyk (Chairman), Dr Antoine Kremer (Chairman), Dr Justyna Nowakowska (Leader of the Workshop), Dr Tomasz Oszako (Chairman), Prof. Zbigniew Sierota (Chairman) and Dr Małgorzata Sułkowska (Secretary).

The present publication represents an overview of knowledge pooled by participants at the "Analysis of microsatellite sequences in Scots pine" Workshop organised by the PROFOREST Centre of Excellence. The Workshop was divided into three parts, the first being devoted to the microsatellite analysis performed on Scots pine, the second concerning the use of molecular-marker analyses in different forest tree species and pathogen detection, and the third describing the statistical methods by which genetic data in forestry are analysed.

I would like to greatly acknowledge the input of all my colleagues from the Department of Genetics and Forest Tree Physiology (FRI Warsaw) and from the Department of Scientific Information (FRI Warsaw) regarding their kind help in the organization and publication of these Proceedings. This meeting would not have taken place without the assistance of a great many people, especially: Antonina Arkuszewska, M.Sc., Mrs. Jolanta Bieniek, Dr Maria Gozdalik, Grażyna Głuch, M.Sc., Marcin Klisz, M.Sc., Piotr Markiewicz, M.Sc., Małgorzata Oszako, M.Sc., Dr Krzysztof Rakowski, Dr Małgorzata Sułkowska, Dr Iwona Szyb-Borowska, Tomasz Wojda, M.Sc., and Marta Zaleska, M.Sc.

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