TECHNICAL SPOTLIGHT

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Workshop at Mt. Taebaek to Promote the XXIII IUFRO World Congress in Seoul

Highlighting Sub-plenary Session 3 (SP-3) Theme "Conservation and Sustainable Use of Forest Genetic Resources"

SP-3 Topics: 1) Current status of forest genetic resources (FGR) and identified critical existing problems; 2) New technologies available for better FGR conservation and utilization; 3) Strategies of FGR conservation and breeding and their inter-relations; 4) Sharing of FGR information and genetic materials; 5) FGR management in response to climate change; 6) National, regional and international FGR programs and cooperation in conservation and utilization; 7) Principles, standards and procedures of prioritizing FGR conservation

The XXIII IUFRO World Congress in Seoul will, among other things, highlight the presentation regarding the status of the restoration project for *Taxus cuspidata* using the "Analysis of genotypes employing DNA markers" initiated by the Korea Forest Research Institute (KFRI), the Congress host organization. Ahead of the briefing, a workshop on conservation and sustainable use of forest genetic resources was held at Mt. Taebaek in Gangwon Province, Korea on 18 May 2010. On the following day (19 May) to celebrate the success of the project and the number of the selected descendant trees, the very 19 descendent trees were transplanted to Jang-Goon peak (735m, North Jeollah Province in the western corridor of the Korean peninsula).

At Jang-Goon peak, *Taxus cuspidata* is on the verge of becoming extinct due to the lack of descendant trees. To cope with the challenge, KFRI selected 19 descendant trees to be planted. The research team employed a model for identifying genotypes through multiple approaches including the analysis of genotypes using DNA markers, assignment analysis, cluster analysis, etc. based on the physical traits and DNA emergence frequency of hundreds of samples. The aim was to identify the origin of source-unidentified creatures. The analysis of genotypes employing DNA markers, having been used for the descendants of *Jeong-i-pum* pine, is expected to contribute to investigation of thefts for source-unidentified trees as well as conservation of genetic resources. There is increasingly growing attention from people dealing with biodiversity conservation and botanical forensics.

Starting with this project, KFRI will conduct a regular monitoring of the forest and look at *Taxus cuspidata* to conserve the forest genetic resources at Mt. Taebaek of which Jang-Goon peak is the largest land where *Taxus cuspidata* naturally grows in Korea.

The number of *Taxus cuspidata* at Jang-Goon peak decreased to 3,928 now from tens of thousands as late as 30 years ago mainly due to illegal logging by hunters for the purpose of using them as garden trees and reckless trespassing of mountain-climbers during three decades. Against this backdrop, most of the *Taxus cuspidata* is aged between 100 and 1,000 years while there are only tens of young seedlings, raising concerns over extinction.

KFRI will accelerate the application of the analysis method in more conservation projects at Mt. Seorak, Mt. Jiri and other famous mountains in Korea. The move is part of the natural heritage conservation initiatives of intensifying economic and cultural value with the *Jeong-i-pum* pine conservation project. It is also an integral part of the assessment projects for scientific genetic resources in response to escalating sovereign rights of nations abundant in natural resources.