



14th International Conference of IUFRO, Working Party 7.02.01

"Root and Butt Rot of Forest Trees"

12th-18th October 2015

Antalya, Fethiye, Bodrum-TURKEY

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Matteo Garbelotto, United States

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Conference Venues

Antalya, Side (Port River Hotel and Lake & Riverside Hotel)

Muğla, Fethiye (The Bay Beach Club)

Muğla, Bodrum (Royal Asarlık Hotel)

Edited by

H. Tuğba Doğmuş-Lehtijärvi

Funda Oskay

Süleyman Uysal

Turkey - 2015

Spot depending root and butt rots of *Abies alba* plantations as significant factor in windthrows

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Abstract

During 5th of March 2015 a windstorm was responsible of several damages in natural stands in Northern and Central Tuscany, Italy. Windthrows occurred mostly in old conifers plantation, and the higher damages were reported where no silvicultural practices were applied in the last 20-40 years.

In order to analyze the key factors involved in the susceptibility of destroyed forest area, a study was realized inside the Vallombrosa Forest ("Foresta Naturale Statale Biogenetica di Vallombrosa"), Tuscany, Italy. The Natural reserve, 1280 ha, lost approximately 50 hectares of forest, corresponding to 20000 m³ of lumber, entirely or almost entirely felt in a matter of few hours. An extensive survey on damaged *Abies alba* plantation spots was realized. The survey has taken into account lithology, soil slope and exposition of the damaged stands. Moreover it included the pre-existing degree of root and butt rot damages, diameter and heights of the wind-thrown trees.

Preliminary results seem to show that trees standing at higher altitude are less susceptible to agents of root and butt rot and, consequently, are more stable in case of a windstorm.

Keywords: Tree stability, Windthrow, *Abies alba*, Root rot