ICAFOF
INTERNATIONAL CONFERENCE ON AGRICULTURE, FOREST, FOOD SCIENCES AND TECHNOLOGIES
Cappadocia/Turkey
15-17 May 2017

The Effect Of Mistletoe On Vertical Resin Duct Density Of Scots Pine Wood

Ertugrul Bilgili[1], Murat Ozturk[1*], Kadir Alperen Coskuner[1], [*]Bedri Serdar[1], Ismail Baysal[2] and Yetkin Usta[1]

[1] Karadeniz Technical University, Faculty of Forestry, 61080 Trabzon/TURKEY
[2] Duzce University, Faculty of Forestry, 81620, Duzce/TURKEY
*Corresponding author: murat_ozturk@ktu.edu.tr

Abstract

Resin ducts are unique to conifers. They are tube-like spaces bordered by special cells that have the ability to secrete pitch or resin into the neighboring ducts. One of the apparent purposes of these ducts is to protect trees and seal up a wound by exuding resin to cover the damaged area of the tree. However high concentration of resin may make Scots pine wood unusable. Resin-rich softwoods can exude resin to surface of the wood, affecting finishing operations such as sanding, painting and varnishing and causing a decrease in wood quality and value. The objective of this study is to determine the effect of mistleote on vertical resin duct density of Scots pine wood according to infection level. Assesment of infection level was based on the six-class dwarf mistletoe rating system (DMRS). In this regard, a total of 9 mistletoe infected and 3 uninfected trees with a diameter greater than 20 cm at brest height (dbh) were cut, and 10 cm thick round discs were taken from each tree at the dbh level. To determine vertical resin duct density, transverse sections were obtained from the disc samples in the laboratory using sliding microtome at 15-20 μm intervals. The transverse sections were observed and pictures were taken with a digital photo microscope and evaluated using an image system software to determine vertical resin duct density of samples. Correlation and regression analyses were conducted to examine the relationship between infection level, and resin duct density. The results indicated that a positive relationship exists between infection level, resin duct density. Regression models were developed to predict resin duct density using infection level.

Keywords : Resin content, Mistletoe, Scots pine