

Abstract

Title: Analysis of heat treatment system and temperature control in Italy

Authors: G. Fragnelli*, C. Cremonini**, S. Ferrari***, J. Sandak***, A. Sandak***, O. Allegretti***, D. Paradiso*, M. Fellin*** and I. Cucui***.

* FITOK Technical Area of Consorzio Servizio Legno-Sughero Milano(MI)Italy;

** Department of Agronomy, Forest and Land Management University of Torino. Grugliasco (TO) Italy;

***Ivalsa-CNR. Trees and Timber Institute. San Michele all'Adige (TN) Italy.

The lines of research conducted in Italy are the following:

- we studied the relationship between the variable factors of production (different types of cargo, type of kiln and amounts of material processed) and the placement of the coldest point of the kiln to determine the most appropriate point where measure temperature of wood core;
- a sample of industrial data about packages thermal sterilization were used to create a database of almost 4.000 records. The database contains all the main information about the process duration and the variables which are supposed to affect it. A statistical analysis of these data was performed in order to investigate the relations among variables. Results showed, for each loading typology, the most important variables which affect the process duration and the study of appropriate predictive functions were initiated.
- the use of FT-NIR (Fourier Transform Near Infrared)spectrometer for the fast detection of thermally treated wooden packaging according to ISPM-15 standard. The basic idea is to verify if the exposition to low temperatures produces chemical changes in wood and if such chemical changes can be detected by NIR.