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Análisis del proceso de ablandamiento de trocería de encinos para la producción de chapa para madera contrachapada (triplay)

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## Abstract

A potential utilization of oak wood is the production of plywood, but it is necessary to define the more adequate conditions for the heating of wood, for the slicing or peeling of the logs, for the drying of veneer and assembling of the plywood. In this study the optimum parameters for the softening of wood for the production of plywood were determined using two logs of each one of the following species: Quercus candicans, Q. laurina and Q. rugosa. From these logs, flitches were obtained, which were heated in a metallic container through coils with thermic oil to heat water up used as thermoconducting medium for the wood. In each flitch, two thermocouples were embedded to mesure the temperature gradient during the heating. Two of the flitches (Q. candicans and Q. laurina), were tested at 60O C, other two (Q. candicans and Q. rugosa) at 65OC and the last two (Q. laurina and Q. rugosa) at 70O C. In general the veneer of Q. candicans and Q. laurina, was the best in texture, with small checks and uniform in color. The veneer of Q. rugosa showed some variation in color, with dark-brownish spots, apparently due to bacterial attack to the trees, and small holes in the veneer from the outer part of the log, due to large rays dimensions. The temperature between 60 to 75O C is considered adequate to process oak wood. Regarding the heating time used in this study, form 50 to 65 hours, it is suggested to use it as a guideline due to the changes in the practices and equipment between plywood mills. Regarding the porous arrangement in the veneer, it was very uniform in its structure, even though Q. candicans and Q. laurina have circular porous distribution; this characteristic was not reflected in the Acathedral@ configuration, which has a higher demand by the final user of plywood

## Keywords

Forest industry, softening of wood,
plywood, veneer, oak wood