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*Populus nigra*

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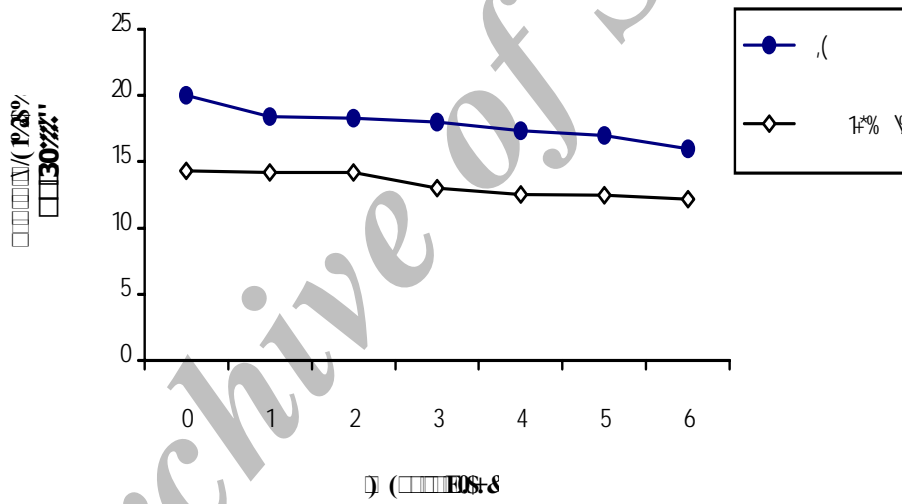
*Acacia mearnsii*

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Yazaki & et al.

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(%)	(%)	Mpa	Mpa	(%)
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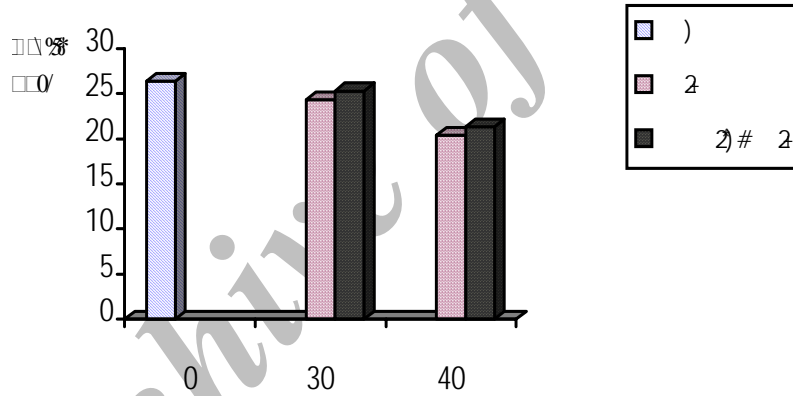
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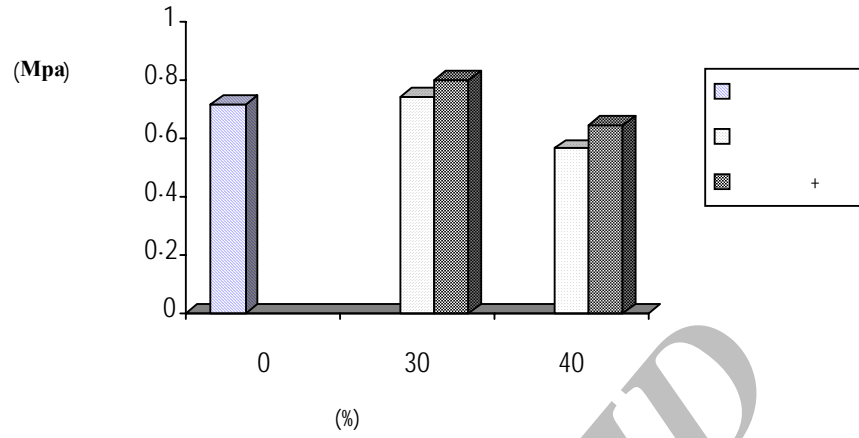
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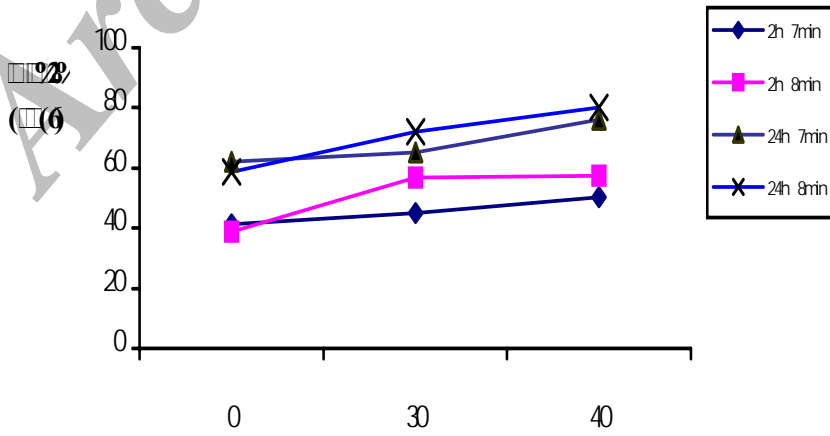
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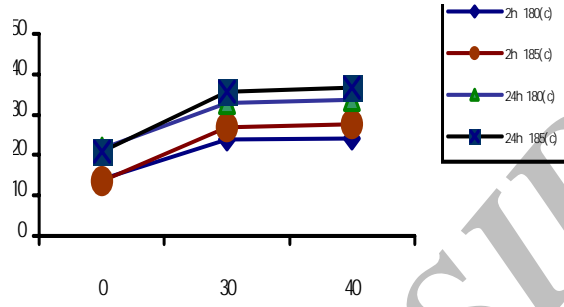
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- 6- Vazquez .G, G .Antorrena, J. C. Parajo and J. L. Francisco, 1989.Preparation of Wood Adhesives by Polycondensation of Phenolic Acids From Pinus Pinaster Brak With Resols. Holz als Roh-und Werk Stoff Vol.47:491-494 .
- 7- Yazaki, Y; P. J. Collins& T. Iwashina, 1993. Extractives From Black Butt (Eucalyptus pilularis) Wood Which Affect Glue Bond Quality of Phenolic Resins, Holzforschung . Vol.47. No.5: 412-418 .
- 8- Fechtal. M, B. Riedl .1993. Use of Eucalyptus and Acacia mollissima Bark Extract –Formaldehyde Adhesives in Particle Board Manufacture.Holzforschung vol.47.No .4:349-357 .
- 9- Pizzi. A and F.A.Cameron, 1981.Decrease of Pressing Tempreature and Adhesive Content by Metallic Ion Catalysis in Tannin – Bonded Particle Board. Holz als Roh –und Werkstoff 39:463-467 .
- 10-Pizzi. A., E. P. Vonleyser, J. Valenzuela and J. G. Clark, 1993. The Chemistry and Development of Pine Tannin Adhesives for Exterior Particleboard,Holzforschung 47:168-174.
- 11-Santana. M. A. E., M. G. D. Baumann, 1996. Phenol-Formaldehyde Plywood Adhesive Resins Prepared with Liquefied Bark Wattle (Acacia Mearnsii).J.Wood Chem. Technol . 16.1-19.

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## An Investigation of the Possibility of PF Resin Replacement with Oak (*Quercus castanifolia*) Bark's Extractives in Particleboard Manufacture

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### Abstract

In this study, the possibility of using oak bark's extractives as phenol-formaldehyde resin replacement was paid attention to in particleboard manufacture. The variables were percent replacement, press temperature as well as press time.

For quality characteristics determination, water absorption & thickness swelling of samples (after 2 and 24 hours) along with bending strength (modulus of rupture) and internal bond properties of boards were evaluated according to DIN 68763.

Results indicated that the best conditions for obtaining the most desirable physical and mechanical properties in PF resin replacement with oak phenolic compounds were obtained in treatments of 30% replacement, 180 °C press temperature, 7 min press time along with 2% zinc-acetate as catalyst.

**Keywords:** Oak, Active phenolic compounds, Extractive materials, Phenol formaldehyde, Zinc-acetate catalyst, Particleboard.

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