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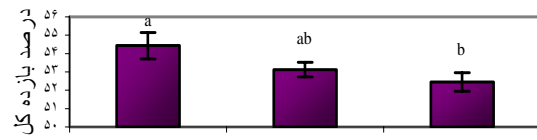
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(b ) (ab ) ( / ) min °C

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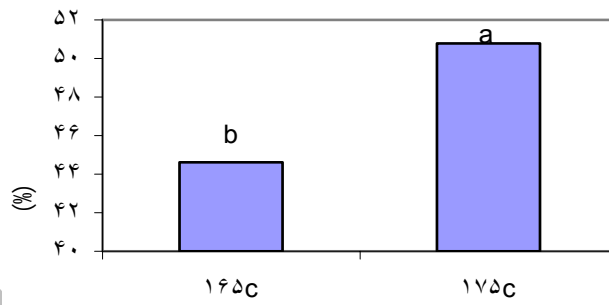
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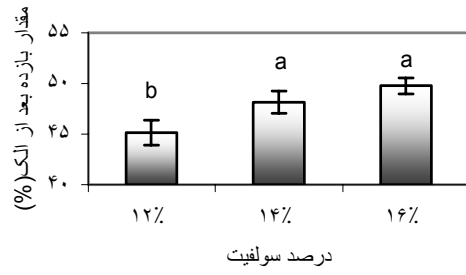
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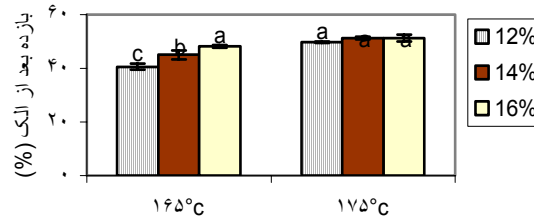


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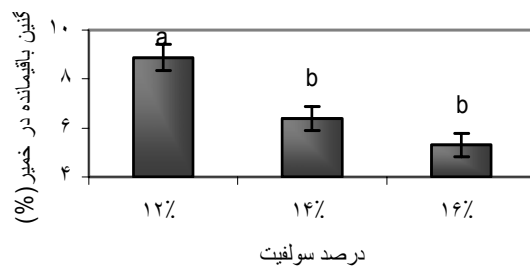
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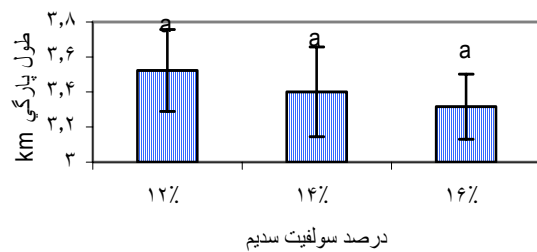
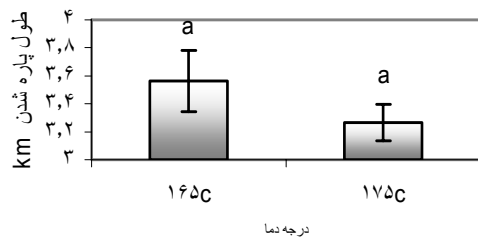
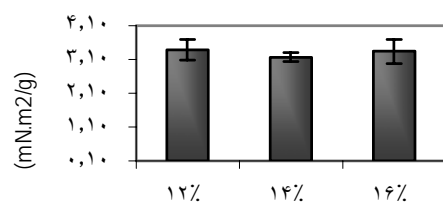
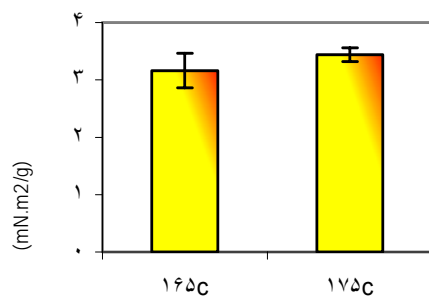
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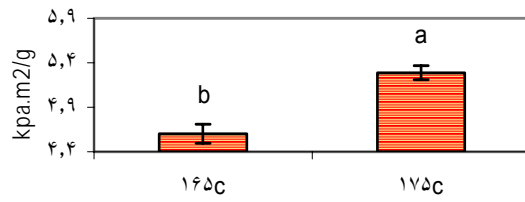
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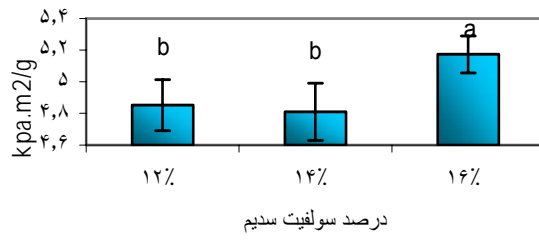
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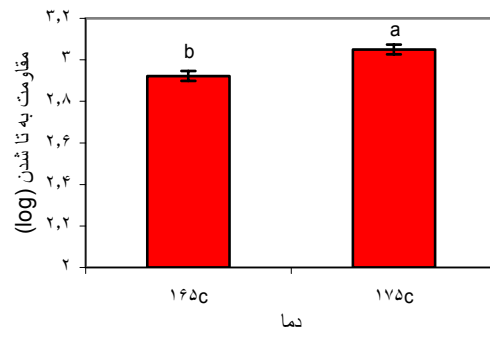


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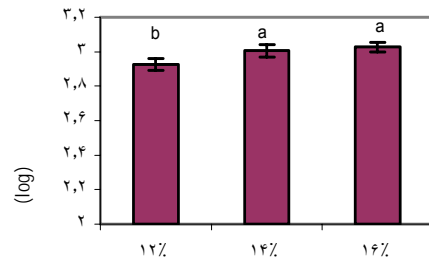


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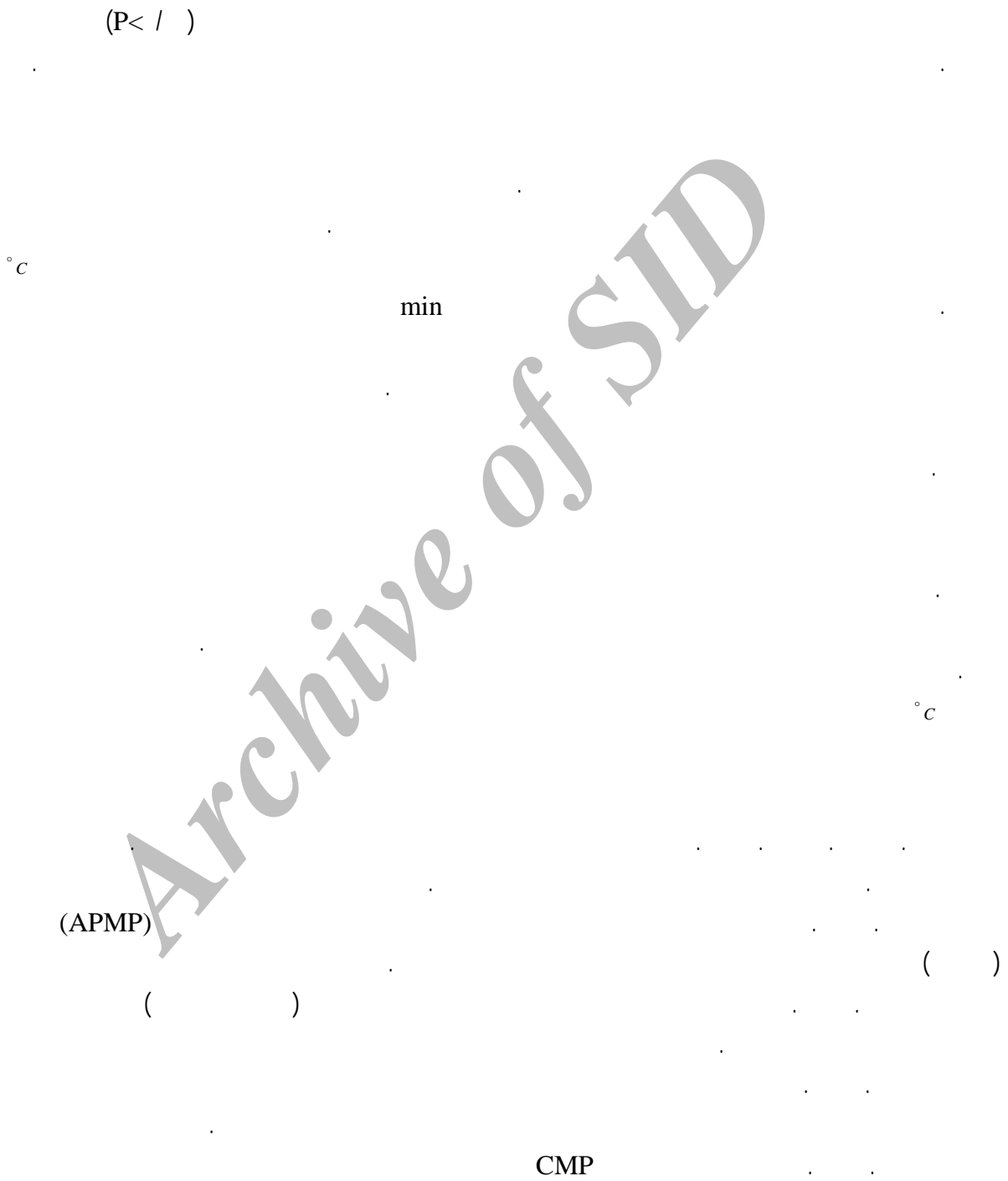


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## A Determination of the Optimum NSSC Pulping Condition of Wheat Straw for Corrugated Medium Production

A. Jahan Latibari<sup>\*1</sup>, E. Hoseini<sup>2</sup>, H. Resalati<sup>3</sup> and A. Fakhrian<sup>4</sup>

<sup>1</sup> Assistant professor, Islamic Azad University, Karadj, I.R.Iran.

<sup>2</sup> Graduate Student, Faculty of Natural Resources, Tarbiat Modarres University, I.R.Iran.

<sup>3</sup> Assistant Professor, Agricultural Sciences and Natural Resources University, Gorgan, I.R.Iran.

<sup>4</sup> Staff Member, Range and Forest Research Institute, I.R.Iran.

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### Abstract

In this research, Neutral Sulfite Semichemical (NSSC) pulping of Khorasan wheat straw was investigated. Prior to pulping, fiber dimensions of wheat straw were measured, and chemical composition determined by using TAPPI standard methods. Pulping conditions were as follows: Pulping temperature of 2 levels ( $165^{\circ}C$ ,  $175^{\circ}C$ ), pulping time of 3 levels (20, 30 and 40 minutes) and sodium sulfite charge at 3 levels (12, 14, 16%). In all cooks,  $Na_2SO_3$  to  $Na_2CO_3$  ratio was 2:1. Following the cooking phase, primary defibration was done, using a laboratory refiner. At the end of pulping, properties such as yield (after cooking), screened yield and residual lignin were determined. Then, among different pulps, some treatments were chosen for production of hand sheets and measurement of physical and strength properties. Initial freeness measurement of these pulps indicated that increasing sodium sulfite charge and pulping temperature decreases freeness. As to burst index and fold endurance, increasing temperature and sodium sulfite charge increased these strengths significantly, while concerning the other two properties of tear index and breaking length, These variable factors had no significant effect on them. A comparison of all results revealed that, treatment of ( $175^{\circ}C$ , 30 min, 16% sodium sulfite) can be chosen as the optimum condition of (NSSC) pulping of wheat straw for corrugated medium production.

**Keywords:** Wheat straw, NSSC pulp, Yield (after cooking), Screened yield, Physical and strength properties of paper, Corrugated medium

\* Corresponding author:

Tel: 0261-4418143 , Fax:

E-mail: Latibari\_24@yahoo.com