韓國産「참오동나무」와「오동나무」의 機械的 性質

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〔서울大学校 農科大学 森林利用研究室 報告 (9月); 1～20, 1948〕

The Mechanical Properties of *Paulownia tomentosa* and *Paulownia coreana* in Korea

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〔Report of Forest Products Lab., Dept. of Forestry, Seoul Nat'l. Univ. (Sept.); 1～20, 1948〕

Conclusion

From very early ages, the paulownia wood (*Paulownia tomentosa* and *Paulownia coreana*) was used traditionally for manufacturing of cabinets and the other furnitures, because of its favourable properties such as lightness, fire resistance and insensibility for moisture. However, their mechanical properties were unknown. Therefore, for the more rational use of paulownia wood, the mechanical properties were studied.

The results were summerized as follows.

1. *Paulownia coreana* has more uniform strength than *Paulownia tomentosa* .
2. The mechanical properties of *Paulownia tomentosa* and *Paulownia coreana were compared in Table 1.*

Table 1. The mechanical properties of paulownia woods in Korea

Mechanical properties	*Paulownia tomentosa*	*Paulownia coreana*
Compression (kg/cm^2)	251	260
Modulus of rupture (kg/cm^2)	435	424
Modulus of elasticity (kg/cm^2)	50,312	46,710
Shear (kg/cm^2)	62	71
Tension perpendicular to grain (kg/cm^2)	10.7	11.2
Cleavage (kg/cm^2)	7.2	7.0

3. Even if, *Paulownia coreana* showed slightly higher values in several properties except modulus of rupture and elasticity, roughly speaking, it can be said that the two kinds of paulownia wood were alike in the mechanical properties.
4. In comparing the strength properties of the woods due to the increasing of its density, it showed that the larger density the larger strength value, and that *Paulownia tomentosa* showed more clear tendency than *Paulownia coreana.*
5. Depending upon the kind of the stength properties of wood, the order of tree species may not always keep the same order of the strength properties. ■