



## INTISARI

Bambu sangat erat kaitannya dengan peradaban manusia di seluruh dunia begitu pula masyarakat Indonesia. Jumlah dan jenis bambu di Indonesia sangat banyak begitu pula dengan kegunaannya yang sangat beragam, termasuk sebagai elemen struktur dalam bangunan. Namun belum adanya SNI bambu serta terbatasnya data dan informasi menyebabkan pengaplikasiannya belum optimal. Dalam penelitian ini bambu Wulung dari Seyegan digunakan sebagai subjek penelitian untuk mencari sifat fisika dan mekanikanya serta hubungan antara keduanya.

Penelitian ini dilaksanakan dengan mengacu pada ISO 22157-1 : 2004 mengenai manual laboratorium : “*Bamboo-Determination of physical and mechanical properties – Part 1 : requirement*”, ISO/TR 225157-2 : 2004 mengenai manual laboratorium : “*Bamboo-Determination of physical and mechanical properties – Part 1 : Laboratory Manual*”. Penelitian yang dilakukan ialah kadar air, Berat volume, kuat lentur, kuat tarik sejajar serat dengan dan tanpa ruas, kuat tekan sejajar serat dengan dan tanpa ruas, kuat geser sejajar serat dengan dan tanpa ruas, modulus elastisitas lentur, modulus elastisitas tarik, dan modulus elastisitas tekan.

Dari penelitian tersebut didapatkan sifat fisika berupa kadar air bambu rata-rata 12,964% dan Berat volume rata-rata 0,558 g/cm<sup>3</sup>. Sifat mekanika yang didapatkan berupa kuat lentur 65,2 MPa, kuat tekan tanpa ruas 56,4 MPa, kuat tekan dengan ruas 53,4 MPa, kuat geser tanpa ruas 3,2 MPa, kuat geser dengan ruas 4,4 MPa, kuat tarik tanpa ruas 195,3 MPa, kuat tarik dengan ruas 92,4 MPa, modulus elastisitas lentur 15 392 MPa, modulus elastisitas tekan tanpa ruas 13 891 MPa, modulus elastisitas tekan dengan ruas 15 482 MPa, modulus elastisitas tarik tanpa ruas 18 576 MPa dan modulus elastisitas tarik dengan ruas 13 222 MPa. Juga diperoleh hasil yaitu sifat mekanika bambu Wulung dari daerah Seyegan berbanding terbalik dengan kadar air dan berbanding lurus dengan Berat volume.

**Kata Kunci:** Bambu Wulung, Seyegan, Sifat fisika, Sifat mekanika



## ABSTRACT

Bamboo is very closely related to human civilization throughout the world as well as in Indonesia. Bamboos in Indonesia have a lot of variety as well as very diverse uses, including as structural elements in buildings. However, there is no SNI (National Standard) for bamboo used as structural elements and the limited data and information caused unoptimal application. In this study Wulung bamboo from Seyegan was used as a research subject to find the physical and mechanical properties and the relationship between the two.

This research was conducted based on ISO 22157-1: 2004 about laboratory manuals: "*Bamboo-Determination of physical and mechanical properties - Part 1: requirement*" and ISO / TR 225157-2: 2004 about laboratory manuals: "*Bamboo-Determination of physical and mechanical properties - Part 1: Laboratory Manual*". This research determined moisture content, density, flexural strength, tensile strength with and without node, compressive strength with and without node, shear strength with and without node, flexural modulus of elasticity, tensile modulus of elasticity, and compressive modulus of elasticity of Wulung bamboo.

From the research, physical properties that were obtained are average moisture content of 12.964% and an average density of 0.558 g/cm<sup>3</sup>. The mechanical properties obtained were flexural strength of 65.2 MPa, compressive strength without node of 56,4 MPa, compressive strength with node of 53,4 MPa, shear strength without node of 3.2 MPa, shear strength with node of 4.4 MPa, tensile strength without node of 195.3 MPa, tensile strength with node of 92.4 MPa, flexural modulus of elasticity of 15 392 MPa, compressive modulus of elasticity without node of 13 891 MPa, compressive modulus of elasticity with node of 15 482 MPa, tensile modulus of elasticity without node of 18 576 MPa and tensile modulus of elasticity with node of 13 222 MPa. The research also found that the mechanical properties of Wulung bamboo from the Seyegan area is inversely proportional to the moisture content and is directly proportional to density.

**Keywords:** Wulung Bamboo, Seyegan, Physical properties, Mechanical properties