

Kenaf fiber: structure and properties

ABSTRACT

Kenaf was introduced in Malaysia in the early 1970s and was recognized as a potential alternative fibrous material for the pulp, paper, and wood composite industries in the late 1990s under the 7th Malaysian Plan 1996–2000 (Abdul Khalil et al. 2010). Compared to other plants, the yields of kenaf are relatively higher (up to 25 t/ha) thus presenting more economic advantages (Wood 2000). For the past several years, kenaf fibers have been shown to be suitable for composite applications such as particleboard, MDF, wood plastic composite (WPC), non-woven materials, and pultruded products (Kawai 2005; Viilar et al. 2009; Dutt et al. 2009; Paridah et al. 2009a; Juliana et al. 2012; Aisyah et al. 2013). The characteristics of kenaf fibers are similar to those of wood compared to hemp, flax, and jute fibers. According to research results (Wood 2000; Rymysza 2001; Kozłowski 2000), the kenaf yield (12–30 t/ha) is greater than those of hemp, flax, and jute, thus providing a more cost-effective raw material. Paridah and Khalina (2009b) reported that under a Malaysian climate, yields of kenaf vary from 2 t/ha to 25 t/ha.