

# Effect of *Acacia Melanoxylon* Fibre Morphology on Papermaking Potential

Anjos O., Santos A., Simões R., 2011. Appita Journal, 64(2):185-191.



<https://search.informit.com.au/documentSummary;dn=021739972882206;res=IELNZC>

## Abstract

This paper reports on the relationship between the fibre morphology of six *Acacia melanoxylon* bleached kraft pulps, produced from wood chips with basic densities of 449, 489, 493, 505, 514 and 616 kg/m<sup>3</sup>, and their papermaking potential. Six wood samples were selected in order to provide pulps with markedly different fibre morphological properties. The pulps were beaten in a PFI mill at 500, 2500 and 4500 revolutions under a refining intensity of 1.7 N/mm and their papermaking potential evaluated. The mean values of fibre length, fibre width and coarseness ranged between 0.78 and 0.99 mm, 17.8 and 19.4  $\mu$ m, and 4.8 and 6.2 mg/100 m, respectively. As expected, the fibres characteristics have very high impact on handsheet structure, including smoothness, and on mechanical and optical properties, for the unbeaten pulps. At a given beating input (same PFI revolutions), the differences between pulps remain very high. Moreover, for a given paper density, tensile and tear strength, and light scattering coefficient are very sensitive to mean pulp fibre characteristics.

Keywords: Pulping; Wood chips; Fibers Analysis; *Acacia melanoxylon*; Wood pulp Testing;