

## ABSTRACT

Morphological, chemical and pulping studies were carried out on the oil palm leaves. Morphological studies indicated that that the midrib was rather similar to low density hardwoods. A mean fibre length of 1.8 mm, a moderately low Runkel ratio of 0.38 and a moderately high coefficient of suppleness of 72% suggested its suitability for moderately strong papers.

Despite a lignin content of 24.5% which was relatively high for an agricultural residue, the high pentosans content, high holocellulose content and low alcohol-benzene solubles from the proximate chemical analysis were favourable in the pulping of the material.

Pulping was carried out by the sulphate, soda and the neutral sulphite semichemical (NSSC) processes. Of these, sulphate pulping was found to be the most effective. In the pulping trials by the chemical sulphate process, the midrib was found to demand 18% active alkali to produce bleachable grades. Bleaching by the Chlorination-Alkali extraction-Hypochlorite (CEH) sequence gave a drop in yield of 8% and a low brightness of 79%.

Both bleached and unbleached sulphate pulps were easily beaten with a fast development of strength properties. The behaviour of the tearing strength of the bleached pulp was unusual in that on beating it remained practically constant down to the lowest beating point.

The bleached sulphate pulp of the midrib were rather similar to that of bond papers containing 40% kenaf pulp, 40% softwood pulp and 20% hardwood pulp in terms of tearing strength and breaking length.

The sulphate pulps, although not exceptional in properties could possibly be converted into medium grade wrapping and packaging papers (Standards Institution of Malaysia, now SIRIM).