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UniKL Author	:	Robert Thomas Bachmann
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Abstract	:	A reliable hemicellulose extraction method from oil palm empty fruit bunches (OPEFB) is required for subsequent investigations into its composition and participation in pyrolysis and anaerobic digestion processes. Previous hemicellulose OPEFB research only looked at yield, purity and functional characteristics. In this study, OPEFB extractives were removed followed by hemicellulose A (HA) and B (HB) isolation and characterisation using Fourier-transform infrared, thermogravimetric and ultimate analysis. Energy dispersive X-ray spectroscopy (EDS) was deployed on the extractive-free OPEFB ash. Ethanol-toluene removed 8.2 ± 0.1 wt% extractives from OPEFB, with ethanol only removing another 1.6 ± 0.1 wt% while water extracted a further 5.4 ± 1.1 wt%. Alkaline extraction of OPEFB with 3 M KOH at 40 °C and subsequent centrifugation yielded 28.6 wt% HA, while 8.0 wt% HB was obtained as a precipitate from the supernatant of HA using 95% ethanol. The empirical formula of commercial xylan, a hemicellulose surrogate, and HA and HB were $C_5H_9.5O_4.4$, $C_5H_9.4O_4.1$ and $C_5H_9.8O_2.9$, respectively. FTIR analysis suggests that xylose and arabinose were the main constituents of xylan, HA and HB. The ash content (AC) of HA and HB was ten times greater than xylan (2.7 wt%). EDS analysis suggests that the high AC of HA and HB is attributed to Ca, Mg and Si which could not be effectively removed during extractives removal.