

Sugar palm fibre and its composites: a review of recent developments

ABSTRACT

The use of natural fibres as reinforcement in composite materials has increased over the years due to the rapid demand for renewable, cost-effective, and eco-friendly materials in many applications. The most common and adopted natural fibres used as reinforcements are flax, kenaf, hemp, jute, coir, sisal, and abaca. However, sugar palm fibre (SPF) as one of the natural fibres is gaining acceptance as a reinforcement in composites, though it has been known for decades in the rural communities for its multipurpose traditional uses. Sugar palm fibre (SPF) is extracted from sugar palm tree typically from its four morphological parts, namely, trunk, bunch, frond, and the surface of the trunk, which is known as Ijuk. In this paper, sugar palm tree, its fibre and composites, and biopolymers derived from its starch are discussed. Major challenges and the way forward for the use of sugar palm fibre and its composites are highlighted. This review also opens areas for further research on sugar palm fibre and its composites for academia and industries.

Keyword: Sugar palm fibre; Natural fibre composites; Biopolymer; Properties; Biodegradability