An investigation of the mechanical characteristics of Aak (Calotropis Procera) bast fibres for preparing NFRC

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Abstract. Aak is one of the most prevalent plants in the dry region of Rajasthan and other desert areas worldwide. Aak is the most widespread plant in the dry region of Rajasthan and other desert areas. The potential medical use of this plant, which is also essential to the desert economy, has been the subject of numerous investigations. To identify potential uses in the various fields of fibre-reinforced composites, such as the interior and exterior of cars, to help them become lighter, cheaper, and more fuel-efficient without sacrificing their strength, our discussion in this paper will concentrate on their physical characteristics. In this study, we extract the plant fibre, analyse its mechanical properties before and after alkali treatment, and then discuss its potential applications in the relevant composites. Moreover, the water absorption of these fibres was examined both before and after treatment. ImageJ used SEM images to measure the cross-sectional area of the fibres.