

## Carbon stored in kenaf fiber utilization of biocomposite applications into automotive components

### ABSTRACT

The aim of this research is to assess the environmental impacts of the carbon dioxide sequestration and emission of kenaf cultivation and stored carbon in kenaf fiber used for automotive components; The data was collected through an interview as well as the data on kenaf cultivated area in the four states (Pahang, Kelantan, Terengganu and Perak) in 2014 which were obtained from the (National Company for Kenaf and Tobacco-Malaysia). The three scenarios of kenaf production (10, 12& 15) ton per hectare has been assumed. The kenaf production ton/hectare has been converted to fibre. Then, the carbon which has been stored in the fiber for use in automotive components has been calculated. The data were analysed using Microsoft Excel software<sup>13</sup> while some of the data were analysed using SPSS<sup>22</sup>. The results depicted that, the Pahang state has the highest contributor to environmental performance. In addition, the investigation has concluded that the usage of kenaf core and bast altogether as composite materials with other fillers for automotive components will enhance in mitigating the pressure to the environment by storing much carbon in the auto body. Also, this will give a superior industrial product through the lifetime of the automobile when the percentage of the fiber in the manufactured components was increased.

**Keyword:** Kenaf production; Fibre conversion; Environmental performance; Automotive components & stored carbon