

## **Planting *Jatropha curcas* on constrained land: Emmission and effects from land use change.**

### **ABSTRACT**

A study was carried out to assess carbon emission and carbon loss caused from land use change (LUC) of converting a wasteland into a *Jatropha curcas* plantation. The study was conducted for 12 months at a newly established *Jatropha curcas* plantation in Port Dickson, Malaysia. Assessments of soil carbon dioxide (CO<sub>2</sub>) flux, changes of soil total carbon and plant biomass loss and growth were made on the wasteland and on the established plantation to determine the effects of land preparation (i.e., tilling) and removal of the wasteland's native vegetation. Overall soil CO<sub>2</sub> flux showed no significant difference ( $P < 0.05$ ) between the two plots while no significant changes ( $P < 0.05$ ) on soil total carbon at both plots were detected. It took 1.5 years for the growth of *Jatropha curcas* to recover the biomass carbon stock lost during land conversion. As far as the present study is concerned, converting wasteland to *Jatropha curcas* showed no adverse effects on the loss of carbon from soil and biomass and did not exacerbate soil respiration.

**Keyword:** *Jatropha curcas*; Constrained land; Emmission; Land use change.