

## **Effects of irrigation treatments on biomass production of different Kenaf varieties**

### **ABSTRACT**

**Background and Objective:** Kenaf (*Hibiscus cannabinus* L.) is fast growth warm-season crop, traditionally used as a source of raw material for rope, canvas and sacks. Recently, it has been identified as a good source of cellulose pulp for paper industry. Continuously increasing demand of raw material in timber industries and increase in deforestation support adopting Kenaf as an alternative source of non-wood raw material. This study aimed to determine the optimal level of irrigation for maximizing vegetative growth of Kenaf varieties grown in high hydraulic conductivity soils and at the same time ensured the highest water use efficiency. **Methodology:** In this study a controlled irrigation experiment was conducted in UPM research farm to assess response of new exotic varieties HC95, FH952 compared to V36, a well-adapted variety to Malaysian conditions. Deficit irrigation (DI) which is one way of maximizing yields per unit of irrigation water was applied where Kenaf were exposed to a different level of water stresses during the growing season. Physiological attributes, growth performance and total biomass production were measured to investigate the response of these varieties to the different irrigation regimes. **Results:** Results showed among the three (100, 60 and 30%) total water irrigation, there was no significant difference between varieties. Water use was similar among water regimes, whilst irrigation water use efficiency (IWUE) progressively increases with the decrease total volume of water applied by irrigation. **Conclusion:** Water supply was not a limited factor in Kenaf production.

**Keyword:** Kenaf; Water use efficiency (WUE); Deficit irrigation (DI)