

Kenaf Water Use Efficiency Under stress

*Elroda Abdelhalim Ibrahim¹, Ahmed Ainuddin Nuruddin^{1,2}, Hazandy Abdul Hamid^{1,2}
and Mohd Shahwahid Haji Othman³

¹*Institute of Tropical Forestry and Forest Products, INTROP Universiti Putra Malaysia, UPM,*

²*Faculty of Forestry Universiti Putra Malaysia, UPM*

³*Faculty of Economics and Management Universiti Putra Malaysia, UPM
43400 UPM Serdang, Selangor*

*Corresponding author. Tel.:010285690; email address: rodahala@gmail.com

Research on kenaf water use efficiency received more attention these days regarding to different wates supply problems in countries growing kenaf (*Hibiscus cannabinus* L.) traditionally for fiber production as a source of raw material for rope, canvas and sacking and recently as a multi-purpose crop for energy and paper pulp production. Some recent studies used Deficit irrigation (DI) methods of high crop water use efficiency (WUE) which can maintain high crop yields if it is properly used. Deficit irrigation is a kind of irrigation to maximizing WUE for higher yields per unit of irrigation water applied. This current study exposed kenaf to certain levels of water stress throughout growing season based on crop evapotranspiration (ET_c) using Tensiometers for soil moisture measurement and Irrigation Scheduling. The expectation is that any yield reduction will be economically not significant compared with the benefits due to saving water, increase planted area and irrigates more crops around the year. Through this research we can explain the critical period of water deficit for kenaf life cycle and try to avoid it and re-arrange irrigation schedules. Kenaf has a great potential in terms of dry biomass production, achieving a maximum of 21–24 t ha as total biomass and 18–19 t ha as stems, under no water limitations (100% ET_c restoration), also (50% ET_c restoration) may be advantageous, since a 44% irrigation water saving, when compared to the fully irrigation treatment, against no significant yield reduction.

Keywords: Kenaf, water use efficiency, deficit irrigation (DI)