

## **Effect of different water regimes and plant growth regulators on growth, physiology and yield of banana (*Musa acuminata* cv. Berangan) in tropical climate**

### **ABSTRACT**

A field investigation under tropical climate was undertaken in the research plot of the Universiti Putra Malaysia, Selangor, Malaysia to study the effects of exogenous application of plant growth regulators on growth performance, physiology changes and biochemical analysis of banana plants (*Musa acuminata* cv. Berangan) under irrigated and rainfed condition. The experiment was laid out as split-plot in randomized complete block design. Results showed that, banana plants grown under the rainfed condition significantly reduced morphological characters such as plant height, pseudo-stem, canopy diameter, but enhanced accumulation of proline and malondialdehyde content in leaves tissue of stress-treated plants. Physiological characters which include total chlorophyll content, relative water content and electrolyte leakage were measured and has indicated significant effect under two different water regimes. Application of plant growth regulators on Berangan banana under different water regimes able to tolerate water stress conditions by changes in vapour pressure deficit as affected by decreasing stomata opening besides enhanced net photosynthesis to produce higher yield of banana fruits.

**Keyword:** Water regime; Water stress; Banana; Productivity; Proline