

## **Effects of drought stress on growth and physiological characteristics of roselle (*Hibiscus sabdariffa* L.)**

### **ABSTRACT**

Drought is the major abiotic stress which causes major losses to agriculture production. This study was conducted to determine the effect of drought stress on the growth and physiological characteristics of *Hibiscus sabdariffa*. The drought stress treatments were 33, 67 and 100% of the field capacity. Each treatment was replicated five times in a randomized complete block design. According to the results, drought stress had significant effects on the growth and physiological traits of *H. sabdariffa*. As the drought stress increased, the plant height, leaf area, specific leaf area, fresh and dry weight of shoot and root, photosynthetic rate, stomatal conductance, intercellular CO<sub>2</sub> concentration and the transpiration rate decreased. The root-shoot ratio was significantly increased in stressed plants. The changes in number of branches per plant and chlorophyll content were, however, not significant. These findings suggested that *H. sabdariffa* might be able to tolerate drought stress by increasing the root-shoot ratio and stability of chlorophyll content.

**Keyword:** Leaf area; Root-shootratio; Leaf gas exchange; Chlorophyll content