

EFFECTS OF WATER DEFICIT ON GROWTH AND
CHLOROPHYLL CONTENT OF *Zea mays*

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EFFECTS OF WATER DEFICIT ON GROWTH AND CHLOROPHYLL CONTENT
OF *Zea mays*

By
Munyati Aimi Binti Maritho

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the requirements for the degree of
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **EFFECTS OF WATER DEFICIT ON GROWTH AND CHLOROPHYLL CONTENT OF *Zea mays*** oleh **MUNYATI AIMI BINTI MARITHO**, no.matrik: **UK11887** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperoleh ijazah **SARJANA MUDA SAINS (SAINS BIOLOGI)**, Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this thesis entitled EFFECTS OF WATER DEFICIT ON GROWTH AND CHLOROPHYLL CONTENT OF *Zea mays* is the result of my own research except as cited in the references.

Signature : 

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ABSTRACT

Environmental stresses or abiotic stresses especially water usually gives many impact for plant growth and productivity. Water deficit has profound impact on ecological and agricultural systems by causing oxidative stress. By relating this environment perturbation with plants tolerance, resistance of plants towards stresses can be identified and improved the plants productivity. The objectives of this study are to determine the effects of water deficit on the growth and chlorophyll content of *Zea mays*. *Zea mays* were treated with different volumes of water i.e. 0, 20, 40, 60, 80 and 100 ml. The growth and chlorophyll content were determined at 0, 1, 2, 3, 5, 7 and 11 days of treatment periods. In general, total chlorophyll content increased at early stages but prolonged exposure to water deficit resulted in the reduction of chlorophyll content. For growth of *Zea mays*, there were no significant differences observed between treated and untreated plants. These results indicated that water deficit did not significantly affected the growth and chlorophyll content of *Zea mays* leaves.

KESAN KEKURANGAN AIR TERHADAP PERTUMBUHAN DAN KANDUNGAN KLOOROFIL DAUN POKOK JAGUNG (*Zea mays*)

ABSTRAK

Tegasan persekitaran atau tegasan abiotik terutamanya air memberi kesan kepada pertumbuhan dan produktiviti tumbuhan. Kekurangan air memberi kesan ke atas sistem ekologi dan pertanian dengan mengakibatkan tegasan oksidatif. Dengan mengaitkan gangguan persekitaran ini dengan tumbuhan, tahap ketahanan tumbuhan terhadap tegasan boleh dikenalpasti dan meningkatkan produktiviti tumbuhan. Objektif kajian ini ialah untuk menentukan kesan tekanan kekurangan air terhadap pertumbuhan dan kandungan klorofil daun pokok jagung (*Zea mays*). Pokok jagung telah dirawat dengan isipadu air yang berbeza iaitu 0ml, 20ml, 40ml, 60ml, 80ml dan 100ml. Pertumbuhan dan kandungan klorofil ditentukan pada 0, 1, 2, 3, 5, 7 dan 11 hari rawatan. Pada umumnya, jumlah kandungan klorofil meningkat pada peringkat permulaan tetapi pendedahan yang lebih lama kepada tegasan kekurangan air mengakibatkan penurunan kandungan klorofil. Bagi pertumbuhan pokok jagung, tiada perbezaan ketara yang dapat dilihat di antara pokok yang dirawat dengan pokok kawalan. Keputusan ini menunjukkan bahawa rawatan kekurangan air tidak memberi kesan kepada pertumbuhan dan kandungan klorofil daun pokok jagung.