EFFECTS OF DROUGHT STRESS ON FATTY ACIDS CONTENTS IN PINEAPLLE (*Ananas comosus*) CULTIVAR N36

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THE EFFECTS OF DROUGHT STRESS ON FATTY ACIDS CONTENTS IN PINEAPPLE (*Ananas comosus)*

By
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Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **Effects of Drought Stress on Fatty Acids Content in Pineapple** oleh **Nur Suriana Binti Kamarudin** no. matrik: **UK20848** telah diperiksa dan semua pembetulan yang disarankan telah dilakukan. Laporan ini dikemukakan kepada Jabatan Sains Biologi sebagai memenuhi sebahagian daripada keperluan memperolehi **Ijazah Sarjana Muda Sains (Sains Biologi)** Fakulti Sains dan Teknologi, Universiti Malaysia Terengganu.

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DECLARATION

I hereby declare that this research report entitled **The Effects of Drought Stress on Fatty Acids Contents in Pineapple (*Ananas comosus*)**is the result of my own research except as cited in the references.

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THE EFFECTS OF DROUGHT STRESS ON FATTY ACIDS CONTENTS IN PINEAPPLE (*Ananas comosus*)

ABSTRACT

Environmental stresses give huge impact on crops growth and productivity. Among the environmental stresses, drought stress cause greater impacts on the yields production of crops. Thus, this study was conducted to determine the effects of drought stress on fatty acids of pineapple (*Ananas comosus*). Pineapple plantlets were treated in different concentrations of PEG 4000 (0%, 2%, 4% and 6%) in MS media for four weeks. The biomass of the plantlets after treatments and dried were recorded. The total lipids were obtained by extraction process. The fatty acid content was determined using Gas chromatography. Palmitic and stearic acids were recorded at four weeks of treatment. The fatty acids contents were decreased as the PEG concentrations increased. The highest reduction was recorded in 6% of PEG 4000 treatments, 19.55%, lower than the control. The fatty acids contents of pineapple were significantly affected by the drought stress. Through this finding, further development for future food security can be achieved by extracting a new gene that can resist towards drought stress.

KESAN TEGASAN KEMARAU TERHADAP KANDUNGAN ASID LEMAK DALAM POKOK NENAS (*Ananas comosus*)

ABSTRAK

Tegasan alam sekitar boleh memberi kesan yang besar terhadap pertumbuhnan serta daya pengeluaran tanaman. Kemarau merupakan salah satu tekanan alam sekitar yang boleh menjejaskan hasil pengeluaran tanaman dengan teruk. Oleh itu, kajian ini dijalankan bertujuan mengenal pasti kesan kemarau terhadap penghasilan asid lemak di dalam nenas (*Ananas comosus*). Anak-anak nenas dirawat dengan menggunakan kepekatan PEG 4000 dengan berbeza (0% , 2% 4% dan 6%) untuk tempoh selama empat minggu. Bacaan biojisim selepas rawatan dan selepas dikeringkan direkodkan. Campuran minyak lipid didapati dengan proses ekstrak. Kandungan asid lemak dalam nenas dianalisa dengan menggunakan mesin gas kromatografi. Asid palmitik dan sterik banyak dicatatkan pada rawatan empat minggu. Bacaan kandungan asid lemak menurun berbanding apabila kepekatan PEG meningkat. Penurunan tertinggi dicatatkan dalam rawatan 6% PEG 4000 iaitu 19.55%, rendah berbanding kawalan. Jadi, ini menunjukkan tegasan kemarau memberi kesan kepada kandungan asid lemak nenas. Melalui penemuan ini, pembangunan bagi tanaman bagi menjamin hasil makanan pada masa hadapan dapat dicapai dengan mengekstrak gen baru yang berdaya tahan terhadap kemarau/kering.