EFFECT OF SODIUM CHLORIDE ON TOTAL
PHENOLIC, FLAVONOID AND ASCORBIC ACID
CONTENT IN *STRIGA ASIATICA* CALLUS

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Effect of sodium chloride on total phenolic, flavonoid and ascorbic acid content in striga asiatica culture / by Wan Nur Suzani Wan Shafiin.

Lihat Sebelah

EFFECT OF SODIUM CHLORIDE ON TOTAL PHENOLIC, FLAVONOID AND ASCORBIC ACID CONTENT IN *STRIGA ASIATICA* CULTURE

By
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Report project submitted in partial fulfillment
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JABATAN SAINS BIOLOGI
FAKULTI SAINS DAN TEKNOLOGI
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Adalah ini diakui dan disahkan bahawa laporan PITA bertajuk: Effect of Sodium Chloride on Total Phenolic, Flavonoid and Ascorbic Acid Content in *Striga asiatica* Culture, no matrik: UK 23186 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 PITA research entitled Effect of Sodium Chloride on Total Phenolic, Flavonoid and Ascorbic Acid Content in *Striga asiatica* Culture is the result of my own research except as cited in the references.

Signature : 

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Date : 23/6/2013

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EFFECT OF SODIUM CHLORIDE ON TOTAL PHENOLIC, FLAVONOID AND ASCORBIC ACID CONTENT IN *STRIGA ASIATICA* CULTURE

ABSTRACT

Plants have various mechanisms such as antioxidant production to survive under NaCl stress. In this study, amount of antioxidant related compounds; phenolic, flavonoid and ascorbic acid produced by *Striga asiatica* culture culture under salinity stress was investigated. The plantlets were cultured in MS medium containing NaCl at concentrations of 50, 100, 150 and 200 mM for 28 days. Results showed that total flavonoid were not significantly ($p>0.05$) affected by NaCl stress. However, NaCl did significantly ($p<0.05$) reduce fresh and dry weight, total phenolic content and ascorbic acid content in *S. asiatica*. These results also indicated that long term NaCl stress did change antioxidant substance content in *S. asiatica* culture. Thus, the difference change of total phenolic, total flavonoid and ascorbic acid content in *S. asiatica* cultures response to NaCl stress enabled to distinguish the metabolic events caused by ionic or osmotic components of salinity.

KESAN TEKANAN NATRIUM KLORIDA TERHADAP KANDUNGAN FENOLIK, FLAVONOID DAN ASKORBIK ASID DALAM KULTUR *STRIGA ASIATICA.*

ABSTRAK

Tumbuhan mempunyai pelbagai mekanisma seperti penghasilan antioksidan untuk terus hidup di bawah tekanan NaCl. Dalam kajian ini, jumlah sebatian yang berkaitan antioksidan; fenolik, flavonoid dan asid askorbik yang dihasilkan oleh kultur *Striga asiatica* di bawah tekanan NaCl telah dikaji. Anak pokok yang dikulturkan dalam medium MS mengandungi NaCl pada kepekatan 50, 100, 150 dan 200 mM selama 28 hari. Keputusan menunjukkan bahawa jumlah flavonoid tidak ketara ($p > 0.05$) terjejas oleh tekanan NaCl. Walau bagaimanapun, NaCl ketara ($p < 0.05$) mengurangkan berat badan segar dan kering, jumlah kandungan fenolik dan kandungan asid askorbik dalam *S. asiatica*. Keputusan ini juga menunjukkan bahawa tekanan NaCl untuk jangka masa yang panjang membuat perubahan kandungan antioksidan dalam kultur *S. asiatica*. Oleh itu, perubahan perbezaan daripada jumlah fenolik, jumlah flavonoid dan kandungan asid askorbik dalam kultur *S. asiatica* bertindak balas terhadap tekanan NaCl untuk membezakan metabolik yang disebabkan oleh komponen ionik atau osmosis kemasinan.