

FLAVONOIDS CONTENT IN TISSUE CULTURE OF  
*(STRIGA ASIATICA)*

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FLAVONOIDS CONTENT IN TISSUE CULTURE OF  
*STRIGA ASIATICA*

By

Asfahani Binti Hamzah

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PENGAUKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk 'FLAVONOIDS CONTENT IN TISSUE CULTURE OF *STRIGA ASIATICA*' oleh ASFAHANI BINTI HAMZAH no. matrik UK7852 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, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF ABBREVIATIONS

g	-	Gram
Hplc	-	High Performance Liquid Chromatography
I <sub>2</sub>	-	Iodine (gas)
kPa	-	Kilo Pascal
ppm	-	part per million
R <sub>f</sub>	-	Retention Factor
rpm	-	round per minutes
Tlc	-	Thin Layer Chromatography
vs	-	Versus
°C	-	Degree of Celsius
%	-	Percentage

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## ABSTRACT

A study was conducted to determine the growth and flavonoids content especially luteolin and apigenin in tissue culture of *Striga asiatica*. The plant was successfully established on liquid B5 media at full, half and double strength of B5 macrosalt. The growth was determined by fresh and dry weight. The results show that modified B5 media comprise of double concentration of ammonium sulphate displayed the highest fresh and dry weight ( $p < 0.05$ ). Modified B5 media can increase the proliferation of *S. asiatica*. The test for luteolin and apigenin production was carried out by Thin Layer Chromatography (TLC). All the samples and standard luteolin and apigenin show positive reaction with Iodine reagent.  $R_f$  value for apigenin and luteolin is 0.930 and 0.831, respectively. The  $R_f$  value for all sample displayed similarity of spots and range from 0.169 to 0.694, but they do not have same  $R_f$  value with the standards. There are at least three unknown compound present in each of the samples. The purple colored media was also analyze using TLC, have the same  $R_f$  value with standard apigenin, showed that the existence of apigenin in the media.

# KAJIAN KE ATAS KANDUNGAN FLAVONOID DALAM KULTUR TISU *Striga asiatica*

## ABSTRAK

Satu eksperimen telah dijalankan untuk menentukan kadar pertumbuhan serta kandungan flavonoid terutamanya apigenin dan luteolin dalam *Striga asiatica*. Tumbuhan telah berjaya dikultur di dalam media B5 cecair pada kekuatan separuh, penuh dan dua kali ganda. Pertumbuhan telah diukur dengan berat basah dan berat kering. Keputusan menunjukkan media B5 yang telah diubahsuai, yang mengandungi dua kali ganda ammonium sulfat menunjukkan kadar pertumbuhan berat basah dan berat kering yang tertinggi ( $p < 0.05$ ). Medium B5 yang diubahsuai ini merangsang pembahagian *S. asiatica*. Ujian ke atas penghasilan apigenin dan luteolin oleh *S. asiatica* telah dijalankan dengan menggunakan kromatografi lapisan nipis. Kesemua sampel dan juga standard apigenin dan luteolin menunjukkan reaksi yang positif apabila plat diuji dengan reagen lodin bagi tujuan pewarnaan dan menunjukkan warna coklat. Nilai  $R_f$  bagi apigenin adalah 0.930 dan luteolin adalah 0.831. Nilai  $R_f$  bagi semua sampel menunjukkan spot yang sama bernilai dari 0.169 kepada 0.694, tetapi tidak sama dengan nilai piawai. Sekurang-kurangnya terdapat tiga jenis kompaun yang tidak dikenalpasti hadir dalam setiap sampel. Media yang berwarna ungu juga diuji dengan TLC dan nilai  $R_f$  adalah sama dengan piawai apigenin menunjukkan kehadiran apigenin dalam media.