

STUDY OF NITROGEN NUTRIENT CONCENTRATION ON THE  
GROWTH AND YIELD OF RICE (Oryza sativa)  
CULTIVATED IN RICE (Oryza sativa)

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**EFFECT OF METHYL EUGENOL CONSUMPTION ON THE ATTRACTION  
AND MATING OF FRUIT FLY, *Bactrocera umbrosa* FABRICIUS (DIPTERA:  
TEPHRITIDAE)**

**By**

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**Research Report submitted in partial fulfilment of  
the requirements for the degree of  
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**JABATAN SAINS BIOLOGI  
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**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk:

Effect of methyl eugenol consumption on the attraction and mating  
of fruit fly *Bactrocera umbrosa* *Poncia* (Diptera: Tephritidae)

oleh LIM CHAI PING, No. Matrik DA 5602

telah diperiksa dan semua pembedahan yang disarankan telah dilakukan. Laporan ini  
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## ABSTRACT

*Bactrocera umbrosa* is an important pest of jackfruit and cempedak in Malaysia. The attraction of female and male *Bactrocera umbrosa* to conspecific males fed with methyl eugenol (ME) was studied in a wind tunnel. The attraction increased with the decrease in light intensity and decreased as dusk approaches. At 18:45 h, which is the peak response period of female attraction, 40% of females were attracted to ME-fed conspecific males whereas only 20% of females were attracted to ME-deprived males. The attraction of males to ME-fed and ME-deprived conspecific males showed no peak response period with the highest percentage being 22.5 % for ME-fed males and 15.0% for ME-deprived males respectively. Greater attraction was observed in females to ME-fed than to ME-deprived as dusk approaches. In field cage study, 10.3% of ME-fed males succeeded in mating while only 6.9% of ME-deprived males established copulation with conspecific females. ME-fed males have a significantly higher percentage of mating pairs ( $P < 0.05$ ) compared to ME-deprived males. ME-fed males exhibited earlier and greater precopulatory behaviors in competition with ME-deprived males to mate with the females. These data shown that the consumption of ME enhances the mating competitiveness of males and suggest that ME functions as a precursor to the male sex pheromone.