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COMPARISON OF DIPTERAN SUCCESSION ON EXPOSED RABBIT  
CARRION AT INDOOR AND OUTDOOR HABITATS

By

Dhanaletchumy d/o Krishnan

Research Report submitted in partial fulfillment of  
the requirements for the degree of  
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Faculty of Science and Technology  
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**PENGAKUAN DAN PENGESAHAN LAPORAN  
PROJEK PENYELIDIKAN I DAN II**

Adalah ini diakui dan disahkan bahawa laporan penyelidikan bertajuk: **COMPARISON OF DIPTERAN SUCCESSION ON EXPOSED RABBIT CARRION AT INDOOR AND OUTDOOR HABITATS** oleh Dhanalechmy a/p Krishnan, no. matrik: UK 8064 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 Gunaan-Pemuliharaan dan Pengurusan Biodiversiti, Fakulti Sains dan Teknologi, Kolej Universiti Sains dan Teknologi Malaysia.

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## LIST OF ABBREVIATIONS

DPX	-	distrene plasticizer xylene
GPS	-	global position system
KOH	-	potassium hydroxide
RH	-	relative humidity
L 1	-	1st instar larvae
L 2	-	2nd instar larvae
L 3	-	3rd instar larvae
Lx	-	lux (light intensity)
sp.	-	species
≈	-	similar
%	-	percentage
°C	-	celsius degree

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## ABSTRACT

Entomology is a specialized field within the biological science which focuses on the study of insect. Among these group, Diptera known as the true flies significantly important in human prospective. The purpose of this study is to gather data about Dipteran succession and development in sheltered and unsheltered area. This study was carried out at two different locations; Green house, KUSTEM and Mengabang Telipot, Terengganu. Observation on presence of Dipteran at different decomposition stage and the larvae development on rabbit carrion were done from the first day until day 14. Results indicated that greatest variety of species was found in outdoor compared to indoor. There are seven species that belongs to four families were collected and identified. Calliphoridae: *Chrysomya rufifacies*, *Chrysomya megacephala*, and *Calliphora* sp.; Muscidae: *Musca domestica* and Sarcophagidae: *Sarcophaga* sp. were found at both area while Calliphoridae: *Lucilia* sp. and Fanniidae: *Fannia* sp. only present in outdoor. The surrounding and environmental conditions highly influence Dipteran succession, colonization, development and also the life cycle. The total immature day for indoor was 16 days while for outdoor was 14 days. In addition, the histology examination revealed that autolysis process is faster in outdoor than indoor. However, further studies should be carried out in this field in order to improve the knowledge on Dipteran characteristic and importance which may be applied in the postmortem interval determination.

# PERBANDINGAN KEJAYAAN DIPTERAN KE ATAS BANGKAI ARNAB DI HABITAT TERTUTUP DAN TERBUKA

## ABSTRAK

Entomologi adalah satu bidang khusus dalam sains biologi yang menumpukan terhadap pengkajian serangga. Di antara kumpulan ini diptera yang dikenali sebagai lalat sebenar memainkan peranan penting dalam aspek kemanusiaan. Tujuan kajian ini adalah untuk mengumpul data berkaitan dengan, kejayaan dan perkembangan Diptera di kawasan terlindung dan terbuka. Kajiannya dibuat di dua tempat berbeza; Rumah hijau KUSTEM dan Mengabang Telipot, Terengganu. Pemerhatian telah dibuat ke atas kehadiran komuniti diptera dalam proses pereputan dan perembangan larva di atas bangkai arnab dari hari pertama hingga hari ke 14. Keputusan menunjukkan kepelbagaian spesies didapati di kawasan terbuka berbanding kawasan terlindung di mana tujuh jenis spesies yang terdiri daripada empat famili telah dikumpulkan dan dikenalpasti. Antaranya, Calliphoridae: *Chrysomya rufifacies*, *Chrysomya megacephala*, *Lucilia* sp. and *Calliphora* sp.; Muscidae: *Musca domestica*; Sarcophagidae: *Sarcophaga* sp. dan Fanniidae: *Fannia* sp. Persekitaran dan keadaan alam banyak mempengaruhi kejayaan, pengkolonian, perkembangan dan juga kitaran hidup sesuatu Diptera. Kajian ini turut mengenalpasti jumlah tempoh kematangan diptera bagi kawasan terlindung adalah 16 hari malahan bagi kawasan terbuka adalah 14 hari. Justeru itu, proses autolisis adalah lebih cepat bagi kawasan terbuka berbanding dengan kawasan terlindung. Walaubagaimanapun kajian lanjutan perlu dibuat dalam bidang ini bagi menambahkan pengetahuan dalam ciri dan kepentingan diptera yang mana boleh digunakan dalam menentukan tempoh kematian.