



# ICEBATS 2018

INTERNATIONAL CONFERENCE  
ON ECOLOGY AND BIODIVERSITY  
ACROSS TIME AND SPACE 2018

## PROGRAMME AND ABSTRACT BOOK

15 - 16 AUGUST | School of Biological Sciences  
2018 | Universiti Sains Malaysia



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<b>16-Aug-18 Thursday</b>	11.30 am	<b>Meet the Experts</b> Venue: conference <b>Room 107</b>
	12.30 pm	<b>LUNCH (VENUE: ANJUNG FLORA)</b>
	<b>AFTERNOON PLENARY SESSION</b> Venue: Conference Room 107, School of Biological Sciences	
	2.00 – 2.25 pm	<b>Plenary</b> <b>Dr. Luki Subehi</b> Research Center for Limnology (RCL)-Indonesian Institute of Sciences (LIPI) <i>"Natural resources conservation and management at tropical inland water"</i>
	2.30– 2.55 pm	<b>Plenary</b> <b>Dr. Nadine Ruppert</b> School of Biological Sciences, Universiti Sains Malaysia <i>"Of men and oranges - how the evil quartet drives orangutan extinction"</i>
	<b>ORAL PRESENTATION SESSION III</b> Venue: Conference Room 107 <i>Ecosystem Health, Services &amp; Society</i> <i>Anthropogenic Disturbance &amp; Invasive Species</i>	
	3.00 - 3.15 pm	O-16-107-10 <b>Misael M. Sanguila</b> Aquatic resources conservation statute compliance in Agus River: The case of Baloi, Lanao Del Norte (Philippines).
	3.15 - 3.30 pm	<b>Session break : Open session</b>
	3.30 - 3.45 pm	O-16-107-11 <b>Woon Hang Lee &amp; Saiful Arif Abdullah</b> Land use and landscape changes of protected areas in a highly developing region of peninsular Malaysia: The case of wildlife reserves in Selangor State
	3.45 - 4.00 pm	O-16-107-12 <b>Jocelyn G. Sta. Ana, Adelina C. Santos-Borja, Gregory Alexis A. Ongjoco, Bileynnie P. Encarnacion &amp; Ireneo G. Bongco</b> Ecosystem health report card for Laguna de Bay
	4.00 - 4.15 pm	O-16-107-13 <b>Siti Norasikin Ismail, Luki Subehi, Asyraf Mansor &amp; Mashhor Mansor</b> Invasive aquatic plant species of Chenderoh Reservoir, Malaysia and Jatiluhur Reservoir, Indonesia.
4.15 - 4.30 pm	O-16-107-14 <b>Rashidi Othman, Razanah Ramya &amp; Norazian Mohd Hassan</b> Characterisation of allelochemical compounds in <i>Rhizophora apiculata</i> and <i>Acrostichum aureum</i> of mangrove forest species.	
5.00 - 5.30 pm	<b>CLOSING CEREMONY</b>	

## CHARACTERISATION OF ALLELOCHEMICAL COMPOUNDS IN *Rhizophora apiculata* AND *Acrostichum aureum* OF MANGROVE FOREST SPECIES

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### Abstract

*Rhizophora apiculata* and *Acrostichum aureum* are a common mangrove species in Malaysia. Allelochemical interaction of the mangrove species was speculated to play an important role in the dominance in a harsh environment. This study assessed the quantitative and qualitative determination for total phenolic content and individual phenolic compounds as allelochemical content for *R. apiculata* and *A. aureum* leaves as potential allelopathic substance and evaluation of the ecological role of the substance. Two types of maceration extraction; water extraction and sequential alkaline extract were used for allelochemical screening analysis. Both extractions were separated by different solvents polarity; hexane, petroleum ether, ethyl acetate, butanol, and ethanol. *A. aureum* had the highest total phenolic contents (1129.52 GAE/g DW) as compared to *R. apiculata*. Meanwhile, the highest phenolic compound was detected in ethanol separation for *A. aureum* at 2176.83 ug/g DW as caffeic acid followed by vanillic acid, ferulic acid, 4-hydroxybenzoic acid, trans-p coumaric acid, 2-coumaric acid and 3-coumaric acid respectively. Interestingly, only *A. aureum* was identified with seven phenolic compounds in sequential alkaline extraction. Therefore, *A. aureum* may work as an allelochemical producer and can contribute to the establishment of pure colonies of *A. aureum* in the mangrove ecosystem.

Keywords: *Rhizophora apiculata*, *Acrostichum aureum*, total phenolic, phenolic acid, allelochemical, HPLC, mangrove forest