



WAN BAYANI WAN OMAR

Lecturer
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QUALIFICATIONS

- Doctor of Philosophy (Biotechnology) Heriot-Watt University, United Kingdom
- Master Science (Molecular Genetic), Kolej Universiti Sains dan Teknologi Malaysia
- Bachelor of Science (Science Biology), Universiti Putra Malaysia

FIELD OF RESEARCH

- Genetic diversity of organisms
- Stress protein of organisms

RESEARCH INTEREST

My current research interests is to understand fundamental aspects of cellular and molecular tool in microalgae related with heavy metal pollution which resulted in many problem for human health. These fundamental aspects include the mechanism of the microalgae in confining this environmental problem. Microalgae have unique ability to bind with metals and are the promising bioindicators. The use of cellular and molecular tools can provide early warnings of physiological alterations in organisms exposed to environmental stress or pollution. I use Mitogen-Activated Protein Kinases (MAPKs) one group of stress proteins such as p38 and JNK. These protein kinases are important amplifying molecules in the cell signaling cascades that can transduce stress signals into cellular responses. I am also interested in studying the genetic diversity of plant and invertebrate by using seed storage protein and DNA as a genetic marker, respectively.

EXPERT LINKAGES



PROFFESIONAL MEMBERSHIP

- Life members (Malaysian Society of Applied Biology)
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GRANTS

Project : Mechanism of lead (Pb) and Mercury (Hg) detoxification by MAP Kinase (Mitogen Activated Protein Kinases) in Microalgae *Chlorella vulgaris* and *Scenedesmus sp.*
Position : Project leader
Grant : Fundamental Research Grant Scheme
Name
Status : Completed
Amount : RM87,000

Project : Study of abundance and genetic variation of *Anadara cornea* (Kerang berbulu) in Setiu Wetland, Terengganu
Position : Project leader
Grant : Nich Research Grant Scheme
Name
Status : Completed
Amount : RM40,000

Project : Microalgae transcriptomic for lipids enhancement
Position : Co-researcher
Grant : SATREPS (JEPUN)
Name
Status : Active
Amount : RM90,000

AWARDS

- APC 2019



PUBLICATIONS

Journal Article

Wan Bayani, W.O. Azmi, W.A. Abd Razak, S.B., Mohamad, N.S., Abd Rahman, N.S.A. and Azhamshah, N.K. 2020. A study on the genetic variability of stingless bees in Terengganu by using Random Amplified Polymorphic DNA (RAPD) markers: a preliminary assessment. *Serangga*, 25(3): 35-44.

Yusuff., A.S., Wan Bayani, W.O. and Rohani, S. 2020. Limited seed dispersal may shape genetic structure of *Hydnophytum formicarum* Jack. Populations in mangrove ecosystem. *BIOTROPIA*, 27(2): 153-161.

Hazlina A.Z., Nakisah M.A., Nur Hidayah, K. R. and Wan Bayani, W.O. 2020. Analyses on toxicity of Pb²⁺ toward chlorophyll a, total soluble protein and caspase-3-like enzyme activity of *Scenedesmus regularis*. *Malaysian Journal of Analytical Sciences*, 24(5): 649-656.

Ariffin, F., Wan Bayani, W.O. and Ahmad, N.A. 2020. Isolation and identification of associated bacteria in the root of aquatic plants for bioremediation in UMT water bodies. *EurAsian Journal of BioSciences*, 14: 6224-6234.

Jaafar, N.M.S., Muhammad Nor, S.M., Wan Bayani, W.O. and Amir, A. 2020. Mangrove of the east coast of Peninsular Malaysia. *Malayan Nature Journal*, 72(4): 441-450.

Wan Bayani, W.O., Faridah, M. and Nurul Ezzati, I. 2019. Study on genetic variability of blood ark, *Anadara cornea* at east coast of Peninsular Malaysia using random Amplified Polymorphic DNA: A preliminary asessment. *Asean Journal Agricultural and Biology*, 6-10.

Nur Syafinaz, M.R., Nakisah, M.A., Wan Bayani, W.O., Ikhwanuddin, M. And Nurul Huda, A.K. 2019. Proteomic analysis and assessment of heavy metals in hepatopancreas of mud crabs from Setiu and Kuala Sepetang. *Asean Journal Agricultural and Biology*, 17-24.

Wan Bayani, W.O., faridah, M., Ikhwanuddin @ Polity, A. and Mohd Firdaus, Z.A. 2019. Study on genetiv variability of mud crab, *Scylla olivacea* at east coast of Peninsula Malaysia using Random Amplified Polymorphic DNA (RAPD): A preliminary assessment. *Malaysia Applied Biology*, 48(1): 1-5.

Nurul Ezzati, I., Wan Bayani, W.O. and Faridah, M. 2018. Population density and size of blood cockle, *Anadara cornea* in Setiu Wetlands, Terengganu during Northeast Monsoon season. *Journal of Sustainability Science and Management*. 13(5), 113-123.

Nakisah, M.A., Wan Bayani, W.O., Nurul Huda, A.K., Nur Syafinaz, M. R., Fathin Noor Aziera, M.U and Mhd Ikhwanudin. 2018. Analysis trace metals (Ni, Cu and Zn) in water, mud and various tissues of mud crab, *Scylla olivacea* from Setiu Wetlands, Terengganu, *Malaysia Journal of Sustainability Science and Management*, 13(2):5-14.

Muhamad Aidil, Z., Wan Bayani W. O., Wan Rohani, W.T., Jeffrine Rovie, R.J. and Mohd Tajuddin., A. 2018. Sequence polymorphism and haplogroup data of the hypervariable regions on mtDNA in Semoq Beri population. *Data in Brief*, 2609-2615.

Wan Bayani, W.O, Hazlina, A.Z, Nakisah, M.A. & Nurhidayah Kamilia, R. 2017. Responses of a freshwater microalga, *Scenedesmus regularis* exposed to 50% inhibition concentration of Pb²⁺ and Hg²⁺. *Malaysia Applied Biology*, 213-220.

Nur Syafinaz, M. R., Fathin Noor Aziera, M.U., Wan Bayani, W.O., Nurul Huda, A.K. and Nakisah, M.A. 2017. A preliminary proteomic-based study of wild mud crab (*Scylla olivacea*) responses towards the surroundings of Setiu Wetland lagoon, Terengganu. *Malaysia Applied Biology*. 46(4):157-162.

M.H.A. Rahman, N.H.A. Kadir, N.M. Amin and W.B.W. Omar. 2017. Cytotoxicity effect of water extracts of *Moringa oleifera* leaves and seeds against MCF-7 cells. *Acta Horti*. 279-286.

Wan Bayani W.O., Hazlina, A.Z., Nakisah M.A. & Nur Hidayah, K.R. 2016. Assessment of Mercury Toxicity on Cultured *Chlorella vulgaris*. *Advances in Environmental Biology*, 10(9): 180-185.

Wan Bayani, W.O., Hazlina, A.Z. & Nur Hidayah, K.R. 2015. Toxicity test of *Chlorella vulgaris* on protein by lead. *Advances in Environmental Biology*, 9(25) : 61-65.

Conference Publication

1. None
- 2.
- 3.

Other Outputs

[Thesis, manuscript, books, reports, etc.]

Wan Bayani Wan Omar. 2011. Studies into interactions between MAP kinase and MAP kinase kinase proteins of Arabidopsis. Doctorate Dissertation. Heriot-Watt University, United Kingdom. 122 p.

Wan Bayani Wan Omar. 2003. Study on Genetic Variability of Oyster (*Crassostrea iredalei*, Faustino) in Peninsular Malaysia Using RAPD-PCR Technique. MSc Thesis. Kolej Universiti Sains dan Teknologi Malaysia, Malaysia. 129p.

Wan Bayani, W.O., Hazlina, A.Z., Jamilah, M. S., Umami Fahetah, M.F. and Muhammad Azhar, A. 2019. Genetic diversity of seed storage protein in selected Melastomataceae and Fagaceae from Tasik kenyir. In: Greater Kenyir Landscapes, Social Development and Environmental Sustainability: From Ridge to Reef. Mohd Tajuddin, A., Aqilah, M., Mohamed, N.Z. and Muhammad Safiih, L. (eds). Springer. 83-90.

Mohd Nizam, Nurul fatin, M.R., Adilah, I., Wan Bayani W.O., Zaiton. H and Zarizal., S. 2019. Comparative study of Physico-Chemical analyses of different water resources in Setiu Wetland, Terengganu. In: Greater Kenyir Landscapes, Social Development and Environmental Sustainability: From Ridge to Reef. Mohd Tajuddin, A., Aqilah, M., Mohamed, N.Z. and Muhammad Safiih, L. (eds). Springer. 25-37.

SUPERVISION

Doctor of Philosophy Degree

Thesis Title :
None

Student Name :

Role :

Status :

Thesis Title :

Student Name :

Role :

Status :

Master Degree

Thesis Title : Mercury and lead tolerance: Analysis of morphological and apoptotic activity in *Chlorella vulgaris* and *Scenedesmus regularis*

Student Name : Nurhidayah Kamilia Rassman

Role : Main Supervisor

Status : Graduated

Thesis Title : The role of stress activated p38 MAP Kinase and JNK protein in the physiological response of mud crab (*Scylla spp*) hemocytes to heavy metal stress.

Student Name : Fatin Noor Aziera Mohd Ubadillah

Role : Main Supervisor

Status : Active

COURSE TAUGHT

- Genetics (BIO3201), (Undergraduate), UMT
- Scientific Writing in Biology (BIO3802), (Undergraduate), UMT
- Developmental Biology (BIO 3601), (Undergraduate), UMT
- Evolution and Biodiversity (BIO3000),(Undergraduate), UMT
- Principles of Ecology (BDV3500), (Undergraduate), UMT

LINKS

- Author Id=57194394172
- <https://orcid.org/0000-0001-5925-5874>ORCID

OTHERS

- Associate Editor (Universiti Malaysia Terengganu Undergraduate Journal)