

# YUKINORI MUKAI



- KULLIYAH OF SCIENCE
- IIUM Kuantan Campus
- Email address: [mukai@iium.edu.my](mailto:mukai@iium.edu.my)

## ACADEMIC QUALIFICATION

- PhD in Agriculture
- MSc in Fisheries Science
- BSc in Fisheries Science

## TEACHING RESPONSIBILITIES

AQUACULTURE	2011/2012 2012/2013 2013/2014 2014/2015 2015/2016 2016/2017
ECOLOGICAL AQUACULTURE	2018/2019 2019/2020
Ecological Aquaculture	2017/2018
FISH BIOLOGY AND BEHAVIOR	2016/2017 2017/2018 2018/2019 2019/2020
HATCHERY DESIGN AND TECHNOLOGY	2016/2017 2017/2018 2018/2019 2019/2020
MARINE BIOLOGY	2011/2012 2012/2013 2013/2014 2014/2015 2015/2016
MARINE EXPEDITION	2016/2017 2017/2018 2018/2019 2019/2020
PHYSICAL OCEANOGRAPHY	2018/2019 2019/2020
SEED PRODUCTION AND CULTURE TECHNIQUE	2019/2020
Seed Production and Culture Technique	2017/2018
TROPICAL MARINE ECOSYSTEM	2015/2016 2016/2017 2017/2018 2018/2019

## RESEARCH PROJECTS

### In Progress

- 2017 - Present** Infusoria cultivating methods using innovative medium for marine finfish larvae
- 2016 - Present** Implications of Current Pattern on Dispersal of oral Larvae in Isolated Reef near Balok Coastal Area
- 2015 - Present** Innovative Fish Feeding System using a computer control Program with the Video Image Processing System and Fish Behaviour Patterns

### Completed

- 2015 - 2017** Innovative Fish Feeding System using a computer control Program with the Video Image Processing System and Fish Behaviour Patterns
- 2015 - -1** Optimum Lighting Conditions to Gain High Survival and Growth Rates of Sutchi Catfish Larvae *Pangasianodon Hypophthalmus* through Physiological and Molecular Studies
- 2014 - 2015** Fundamental Study on the Optimum Growth Condition of Seaweed, *Gracilaria Manilaensis* under Different Salinities, Ph and Light Intensities
- 2014 - 2017** Fundamental Study for New Type of Live Feed for Small-Mouth Marine Finfish Larvae to Investigate Optimum Salinities and Feed Formula
- 2014 - 2016** Control of Cannibalistic Behaviour of African Catfish *Clarias gariepinus* with the Least Physiological Stress Using Optimum Light Wavelength and Light Intensity for Stable Seed Production
- 2013 - 2015** Study on Properties and Composition of Live Rocks towards Potential Artificial Reef for Marine Habitat Restoration
- 2012 - 2014** Study on Spatio-temporal Variation of Scleractinian Coral Recruitment Towards Sustainable Coral Reef Conservation in Pulau Tioman and Balok, Pahang
- 2012 - 2014** Innovative Fish Rearing System with the Least Physiological Stress using Optimum Light Wavelength and light Intensity
- 2012 - -1** Asian Seabass Seed Production Using a Demand Feeding System
- 2012 - 2013** Asian Seabass Seed Production Using a Demand Feeding System
- 2011 - 2013** Optimum Light Intensity for Larval Rearing of Tiger Grouper
- 2010 - 2012** Development of a Demand Feeding System for Grouper Juveniles

## PUBLICATIONS

### Article

- 2019** [A review of betanodavirus vaccination as preventive strategy to viral nervous necrosis \(VNN\) disease in grouper.](#) *Aquaculture International Journal* , 27 (5) pp.1565-1577
- 2018** [The potential of dried and fresh extracts of \*Sansevieria trifasciata\* to mitigate \*Alexandrium tamiyavanichii\*, a toxic dinoflagellate.](#) *Science Heritage Journal* , 2 (1) pp.18-20
- 2018** [Genetic diversity of the orange-spotted grouper \(\*Epinephelus coioides\*\) in Terengganu Malaysia based on mitochondrial cytochrome b sequence data.](#) *Malaysia Applied Biology* , 47 (6) pp.61-68
- 2018** [Visual pigments and spectral sensitivity of juvenile sutchi catfish \(\*Pangasianodon hypophthalmus\* Sauvage 1878\).](#) *Journal of Applied Ichthyology* , 34 (6) pp.1314-1319

- 2018** [Identification of euplotes encysticus a starter live feed for marine fish larvae based on morphology and molecular sequences.](#) Malaysian Applied Biology , 47 (3) pp.175-180
- 2017** [Aggressive behaviour of African catfish clarias gariepinus juveniles under different light intensities and light wavelengths.](#) Malaysian Applied Biology , 46 (4) pp.7-13
- 2017** [Current status of coral reefs in Tioman Island, Peninsular Malaysia.](#) Turkish Journal of Zoology , 41 (2) pp.294-305
- 2017** [Optimum light wavelength and light intensity for rearing juvenile African Catfish \(Clarias gariepinus\).](#) International Journal of Aquatic Science , 8 (2) pp.107-112
- 2017** [Influence of light wavelength and intensity on the survival and somatic growth of the early larval stage of sutchi catfish Pangasianodon hypophthalmus.](#) International Journal of Aquatic Science , 8 (2) pp.113-119
- 2017** [Coral recruitment success and sessile benthic colonisation estimation in Tioman Island Marine Park, Malaysia.](#) Journal of Coastal Conservation , 21 (6) pp.883-891
- 2017** [Relationship between adult abundance and successive coral recruitment density in the Tioman Island Marine Park, Malaysia.](#) Zoology and Ecology , 27 (3-4) pp.328-334
- 2016** [Morphogenesis of free neuromasts in the larvae of brown-marbled grouper epinephelus fuscoguttatus.](#) Marine and Freshwater Behaviour and Physiology, , 49 (3) pp.159-171
- 2016** [Demand feeding system using an infrared light sensor for Brown-marbled grouper juveniles, Epinephelus fuscoguttatus = Penggunaan sensor cahaya inframerah dalam sistem suapan permintaan untuk juvana Kerapu Harimau, Epinephelus fuscoguttatus.](#) Sains Malaysiana , 45 (5) pp.729-733
- 2016** [Effective method to culture infusoria, a highly potential starter feed for marine finfish larvae.](#) International Journal of Fisheries and Aquatic Studies , 4 (3 (Part B)) pp.124-127
- 2016** [Survival and growth rates of sutchi catfish \(Pangasianodon hypophthalmus\) juveniles under different light wavelengths and intensities.](#) Malaysian Applied Biology , 45 (2) pp.29-36
- 2015** [First report of cochlodinium polykrikoides \(dinophyceae\), a harmful algal bloom \(HAB\) species in the coastal waters of peninsular Malaysia.](#) Malaysian Journal of Science , 34 (1) pp.87-92
- 2015** [The effects of different ph and salinities on growth rate and carrageenan yield of gracilaria manilaensis.](#) Jurnal Teknologi , 77 (25) pp.1-5
- 2015** [Why is cannibalism less frequent when larvae of sutchi catfish Pangasianodon hypophthalmus are reared under dim light? .](#) Aquaculture Research , 46 pp.1958-1964
- 2015** [Morphological types and arrangement of cone cells, and the visual acuity of sutchi catfish pangasianodon hypophthalmus .](#) Jurnal Teknologi , 77 (25) pp.7-12
- 2015** [Assessing the potential of mangrove educotourism to marine protected area: a case of Tioman and Tulai Islands, Pahang, Malaysia.](#) Natural Resources , 6 pp.442-449

- 2014** [Egg hatching rates of brown-marbled grouper, \*Epinephelus fuscoguttatus\* under different light wavelengths and intensities.](#) Malaysian Journal of Science , 33 (2) pp.40-44
- 2014** [Morphogenesis of sense organs and behavioural changes in larvae of the brown-marbled grouper \*Epinephelus fuscoguttatus\* \(Forsskål\).](#) Marine and Freshwater Behaviour and Physiology , 47 (5) pp.313-327
- 2014** [Morphogenesis of sense organs in the brown-marbled grouper \*Epinephelus fuscoguttatus\* \(Forsskål\).](#) Marine and Freshwater Behaviour and Physiology , 47 (5) pp.313-327
- 2014** [Visual thresholds for feeding and optimum light intensity for larval rearing of Asian seabass, \*Lates calcarifer\* \(Bloch\).](#) Aquaculture Research , 44
- 2013** [Diversity of phytoplankton in coastal water of Kuantan, Pahang, Malaysia.](#) Malaysian Journal of Science , 32 (1) pp.29-37
- 2013** [Determination of visual acuity and visual axis of brown-marbled grouper, \*epinephelus fuscoguttatus\* to develop a demand feeding system.](#) Malaysian Journal of Science , 32 (1) pp.24-28
- 2013** [Reduced cannibalistic behavior of African catfish, \*clarias gariepinus\*, larvae under dark and dim conditions.](#) Zoological Science , 30 (6) pp.421-424
- 2012** [Light intensity requirements for feeding behaviour by the brown-marbled grouper, \*Epinephelus fuscoguttatus\* \(Keperluan Keamatan Cahaya untuk Perlakuan Pemakanan Ikan Kerapu Harimau, \*Epinephelus fuscoguttatus\*\).](#) Sains Malaysiana , 41 (10) pp.1193-1196
- 2012** [Retinomotor response in the larvae of brown-marbled grouper, \*Epinephelus fuscoguttatus\* .](#) Journal of Fisheries and Aquatic Science , 7 (3) pp.233-239
- 2012** [Retinomotor response in larvae of brown-marbled grouper, \*Epinephelus fuscoguttatus\* \(Forsskal\) .](#) Journal of Fisheries and Aquatic Science , 7 (3) pp.233-239
- 2011** [Ontogenetic eye development and related behavioural changes in larvae and juveniles of barramundi \*Lates calcarifer\* \(Bloch\) .](#) Marine and Freshwater Behaviour and Physiology , 44 (6) pp.339-348
- 2011** [Ontogenetic eye development and related behavioural changes in larvae and juveniles of barramundi \*Lates calcarifer\* \(Bloch\).](#) Marine and Freshwater Behaviour and Physiology , 44 (6) pp.339-348
- 2011** [Remarkably high survival rates under dim light conditions in sutchi catfish \*Pangasianodon hypophthalmus\* larvae .](#) Fisheries Science , 77 (1) pp.107-111
- 2011** [High survival rate of sutchi catfish, \*Pangasianodon hypophthalmus\*, larvae reared under dark condition.](#) Journal of Fisheries and Aquatic Science , 6 (3) pp.285-290
- 2010** [Feeding behavior under dark conditions in larvae of sutchi catfish \*Pangasianodon hypophthalmus\*.](#) Fisheries Science , 76 (3) pp.457-461
- 2010** [Development of sensory organs and changes of behavior in larvae of the sutchi catfish, \*Pangasianodon hypophthalmus\*.](#) Fisheries Science , 76 (6) pp.921-930
- 2008** [Development of sensory organs in larvae of African catfish \*Clarias gariepinus\*.](#) Journal of Fish Biology , 73 (7) pp.1648-1661

- 2008 [Effects of different salinity levels on the survival and growth of marble goby, \*Oxyeleotris marmoratus\* larvae.](#) Aquaculture Science , 56 (3) pp.423-432
- 2007 [Structure and development of free neuromasts in barramundi, \*lates calcarifer\* \(block\).](#) Zoological Science , 24 (8) pp.829-835
- 2006 [Role of free neuromasts in larval feeding of willow shiner \*Gnathopogon elongatus caerulescens\* Teleostei, Cyprinidae.](#) Fisheries Science , 72 (4) pp.705-709
- 2005 [Role of olfaction and vision in homing behaviour of black rockfish \*Sebastes inermis\*.](#) Journal of Experimental Marine Biology and Ecology , 322 (2) pp.123-134
- 2004 [Development of free neuromasts in larvae of cyprinid fish.](#) Mem. Fac. Agr. Kinki Univ. , 27 pp.1-14
- 2003 [Successful Sargassum bed formation in a "Isoyake" area by net transplantation of juveniles with small algae.](#) Suisan Zoshoku , 51 (2) pp.127-134
- 2002 [Evidence of homing of black rockfish \*Sebastes inermis\* using biotelemetry.](#) Fisheries Science , 68 (6) pp.1189-1196
- 1995 [Development of free neuromasts with special reference to sensory polarity in larvae of the willow shiner, \*Gnathopogon elongatus caerulescens\* \(teleostei, cyprinidae\).](#) Zoological Science , 12 (1) pp.125-131
- 1995 [Cupular growth of embryonic free neuromasts in the willow shiner, \*Gnathopogon elongatus caerulescens\*, and the pattern in the changes in cupular length after hatching.](#) Fisheries Science , 61 (3) pp.521-522
- 1994 [The relationship between the length of the cupulae of free neuromasts and feeding ability in larvae of the willow shiner \*Gnathopogon elongatus caerulescens\* \(Teleostei, Cyprinidae\).](#) The Journal of Experimental Biology , 197 (1) pp.399-403
- 1993 [Extremely long cupulae of embryonic neuromasts in cyprinid fish.](#) Copeia , 1994 (4) pp.1157-1159
- 1992 [Cupular growth rate of free neuromasts in three species of cyprinid fish.](#) Nippon Suisan Gakkaishi , 58 (10) pp.1849-1853
- 1992 [Development of free and canal neuromasts and their directions of maximum sensitivity in the larvae of ayu, \*Plecoglossus altivelis\*.](#) Japanese Journal of Ichthyology , 38 (4) pp.411-417
- 1991 [Morphological studies on the cupulae of free neuromasts along with the growth of larvae in cyprinid fish.](#) Nippon Suisan Gakkaishi , 57 (7) pp.1339-1346
- 1991 [Chemoreception and vertical movement in planktonic yolk-sac larvae of red sea bream \*Pagrus major\*.](#) Journal of Applied Ichthyology , 7 (3) pp.129-135
- 1984 [Change in the visual threshold with development of rods in ayu \*Plecoglossus altivelis\*.](#) Nippon Suisan Gakkaishi , 50 (12) pp.2133
- 1983 [Morphology of the eye and free neuromast of larval ayu and pale chub and its relation to behaviour in water flow.](#) Nippon Suisan Gakkaishi , 49 (10) pp.1527-1532

#### Conference or Workshop Item

- 2018 [The Identification of hunger behaviour of lates calcarifer through the integration of image processing technique and support vector machine.](#) In: **4th Asia Pacific Conference on Manufacturing Systems and the 3rd International Manufacturing Engineering Conference, APCOMS-IMEC 2017**
- 2018 [Demand feeding device using a video processing system and fish behavior as parameter for a computer program to control feeding time and amount.](#) In: **International Conference on Agriculture, Animal Sciences and Food Technology (ICAFT) 2018**
- 2018 [The spectrophotometric determination of visual spectral sensitivity of sutchi catfish \*Pangasianodon hypophthalmus\*.](#) In: **International Conference on Agriculture, Animal Sciences and Food Technology (ICAFT) 2018**
- 2018 [The classification of hunger behaviour of Lates Calcarifer through the integration of image processing technique and k-Nearest Neighbour learning algorithm.](#) In: **International Conference on Innovative Technology, Engineering and Sciences 2018, iCITES 2018**
- 2018 [Quatification of carrageenan in gracilaria cf. Manilensis \(Rhodophyta\) exposed to different salinities and PH using attenuated total reflection-fourier transform infrared spectroscopy \(ATR-FTIR\).](#) In: **International Conference of Analytical Sciences**
- 2017 [Best growth condition for Gracilaria Manilaensis \(rhodophyta\) under different salinities, Ph and light intensities and its type of carrageenaan.](#) In: **Asian Pacific Aquaculture 2017 (APA17)**
- 2017 [Cultivation of infusoria as a starter live feed for marine finfish larvae.](#) In: **Asian-Pacific Aquaculture 2017 (APA17)**
- 2017 [Innovative medium for cultivating infusoria.](#) In: **28th International Invention, Innovation & Technology Exhibition 2017**
- 2017 [Cannibalistic behaviour of Sutchi catfish \(\*Pangasianodon hypophthalmus\*\) larvae under different light conditions.](#) In: **6th International Conference on Advancement in Science and Technology (iCAST 2017)**
- 2016 [Fish welfare: Improving fish culture method through modification of the light conditions.](#) In: **2nd World Congress on Integration Islamicisation: Focus On Medical & Health Care Sciences 2016 (2WCII-2016)**
- 2016 [Morphological and 18s rRNA sequencing of Euplotes sp.: a potential live feed for marine finfish larvae.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**
- 2016 [Genetic diversity of the orange-spotted grouper \(\*Epinephelus coioides\*\) in Terengganu Malaysia based on mitochondrial cytochrome b sequence data.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**
- 2016 [Cortisol \(stress\) level of sutchi catfish \(\*pangasianodon hypophthalmus\*\) juvenile under different light wavelengths and intensities.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**

- 2016 [The effects of light wavelengths and light intensities on the aggressive behaviour of African catfish \*Clarias gariepinus\* juveniles.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**
- 2016 [A spectrophotometric study on the visual pigments from retinal photoreceptors of juvenile sutchi catfish \*Pangasianodon hypophthalmus\*.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**
- 2016 [A simple and effective method to culture ciliated protozoans as a starter diet for marine finfish larvae.](#) In: **2nd International Conference on Oceanography and Sustainable Marine Production (ICOSMaP 2016)**
- 2015 [The optimum light wavelength and light intensity for production of African catfish, \*clarias gariepinus\* juveniles.](#) In: **International Conference on Advancement in Science and Technology (iCAST 2015) - 'Frontiers in Biotechnology'**
- 2015 [Genetic variation of wild tiger grouper \(\*Epinephelus fuscoguttatus\*\) obtained from Kedah, Malaysia.](#) In: **International Conference on Advancement in Science and Technology (iCAST 2015) - 'Frontiers in Biotechnology'**
- 2015 [Survival and growth rates of sutchi catfish juveniles, \*pangasianodon hypophthalmus\* under different light wavelengths and intensities.](#) In: **International Conference on Advancement in Science and Technology (iCAST 2015) - 'Frontiers in Biotechnology'**
- 2015 [The morphological types and arrangement of cone cells, and the visual acuity of sutchi catfish \*pangasianodon hypophthalmus\*.](#) In: **International Conference on Advancement in Science and Technology (iCAST 2015) - 'Frontiers in Biotechnology'**
- 2014 [The potential of ornamental plant, \*Sansevieria trifasciata\* to inhibit the growth of harmful algal bloom species.](#) In: **International Conference on Applied Life Sciences (ICALS2014)**
- 2014 [Three times higher hatching rates of brown-marbled grouper, \*epinephelus fuscoguttatus\* under Green light than white light.](#) In: **International Research, Invention and Innovation Exhibition 2014 (IRIIE2014)**
- 2014 [Significantly higher growth rates of grouper juveniles reared by a demand feeding system using an infrared light sensor.](#) In: **International Research, Invention and Innovation Exhibition 2014 (IRIIE2014)**
- 2014 [Cannibalistic behaviour of African catfish juveniles, \*clarias gariepinus\* under different light wavelengths and intensities.](#) In: **3rd International Conference on Applied Life Sciences (ICALS2014)**
- 2013 [Optimum light conditions for eggs incubation and larval rearing of brown-marbled grouper \*Epinephelus fuscoguttatus\*.](#) In: **Conference on Oceanography and Sustainable Marine Production: A Challenge of Managing Marine Resources Under Climate Change (ICOSMaP )2013**
- 2013 [Spatio-temporal variation of Scleractinian coral recruitment on terra-cotta tiles and artificial live rock in Tioman Island, Malaysia.](#) In: **International Conference on Oceanography and Sustainable Marine Production: A Challenge of Managing Marine Resources in a Changing Climate (ICOSMaP) 2013**

- 2013 [Rearing of grouper juveniles using a demand feeding system with an infrared light sensor](#) . In: **International Conference on Oceanography and Sustainable Marine Production: A Challenge of Managing Marine Resources in a Changing Climate**
- 2013 [Demand feeding system for juveniles of groupers, brown-marbled grouper and orange-spotted grouper](#) . In: **IRIIE 2013**
- 2013 [Circadian rhythm of juveniles of brown-marbled grouper and orange-spotted grouper](#) . In: **IRIIE 2013**
- 2013 [Optimum light conditions for larval rearing of tiger grouper \*Epinephelus fuscoguttatus\*](#) . In: **Annual International Seminar on Marine Science & Aquaculture 2013 (ISOMSA), "Ocean Health & Our Future" in UMS, Kota Kinabalu, Sabah at 19 - 21 March 2013.**
- 2013 [Juvenile rearing of Asian seabass \*Lates calcarifer\* using Demand feeding system](#). In: **Annual International Seminar on Marine Science & Aquaculture 2013 (ISOMSA), "Ocean Health & Our Future"**
- 2012 [Innovative demand feeding device using a light sensor](#) . In: **IIUM Research, Invention and Innovation Exhibition, IRIIE 2012**
- 2012 [Feeding behavior under dark conditions in larvae of sutchi catfish \*Pangasianodon hypophthalmus\*](#). In: **IIUM Research, Invention and Innovation Exhibition 2012**
- 2012 [Optimum light intensity for larval rearing of African catfish, \*Clarias gariepinus\*](#). In: **International Seminar on Marine Science and Aquaculture**
- 2012 [Development of a demand feeding system for grouper juveniles - \(1\) Orange-spotted grouper](#). In: **2nd Conference for Regional Cooperation in Ocean and Earth Science Research in the South China Sea (SCS 2012)**
- 2012 [Development of a demand feeding system for grouper juveniles - \(2\) tiger grouper](#). In: **2nd Conference for Regional Cooperation in Ocean and Earth Science Research in the South China Sea (SCS 2012)**
- 2011 [Optimum light intensity for larval rearing of brown marbled grouper \*Epinephelus fuscoguttatus\*](#). In: **International Symposium on Marine Ecosystems, Natural Products and their Bioactive Metabolites**
- 2011 [Determination of visual axis of tiger grouper juveniles \*Epinephelus fuscoguttatus\*, to develop a demand feeding system](#). In: **8th Annual Seminar on Marine Science & Aquaculture: Sustainable Development & Management of Aquatic Resources**
- 2006 [Development of sensory organs in larvae of mouse grouper, \*Cromileptes altivelis\*](#). In: **International Conference on "Coastal Oceanography and Sustainable Marina Aquaculture, Confluence & Synergy"**
- 2006 [Development of free neuromasts in larvae of mouse grouper, \*Cromileptes altivelis\*](#). In: **International Conference on "Coastal Oceanography and Sustainable Marina Aquaculture, Confluence & Synergy"**
- 2006 [Feasibility study of applications of micro-bubbles for aquaculture](#). In: **International Conference on "Coastal Oceanography and Sustainable Marina Aquaculture, Confluence & Synergy"**



**Book  
Book Section**

- 2018** [The identification of hunger behaviour of lates calcarifer using k-nearest neighbour.](#) **In: Intelligent Manufacturing & Mechatronics** Springer Nature Singapore Pte Ltd. . ISBN 978-981-10-8787-5 , pp.393-399
- 2011** [Mariculture in South Korea: the opportunity for growth.](#) **In: Aquaculture and the environment: Present status and future challenges** IIUM Press . ISBN 978-967-418-197-0 , pp.77-81
- 2011** [Larval feeding behavior and sensory organs .](#) **In: Basic knowledge in marine sciences** IIUM Press . ISBN 9789674181994 , pp.215-220
- 2011** [Procedure of histological experiment .](#) **In: Basic knowledge in marine sciences** IIUM Press . ISBN 9789674181994 , pp.221-230
- 2011** [Effects of nitrifying bacteria and probiotic bacteria on water quality in the juvenile rearing tanks of Patin \(Pangasius hypophthalmus\).](#) **In: Aquaculture and the environment: Present status and future challenges** IIUM Press . ISBN 978-967-418-197-0 , pp.205-211
- 2011** [Aquaculture in China: a focus on major contributing species.](#) **In: Aquaculture and the environment: Present status and future challenges** IIUM Press . ISBN 9789674181970 , pp.25-32