# INDONESIAN AQUACULTURE JOURNAL

Volume 13 Number 2, December 2018



#### FOCUS AND SCOPE OF INDONESIAN AQUACULTURE JOURNAL

Indonesian Aquaculture Journal (IAJ) is a peer-reviewed and open access journal based in Indonesia that globally/internationally accepts and publishes scientific articles in the field of aquaculture. The journal is hosted and managed by the Research Center for Fisheries, Indonesian Ministry of Marine Affairs and Fisheries and serving as a scientific platform to share research information in and contribute to the development of various disciplines of aquaculture including genetics, reproduction, nutrition and feed, fish health and diseases, engineering, and environmental assessment.

IAJ (http://ejournal-balitbang.kkp.go.id/index.php/iaj) is published in both printed (p-ISSN 0215-0883) and electronic (e-ISSN 2502-6577) versions. Currently, IAJ is listed as Category 2 Accredited Journal in the Decree of the Ministry of Research, Technology, and Higher Education of Republic of Indonesia (RISTEKDIKTI) No.: 21/E/KPT/2018, Date July 9, 2018. The accreditation is valid for five years from Volume 11 Number 1, 2016 to Volume 15 Number 2, 2020). This journal is published twice a year (June and December issues) with the first IAJ edition published in 2006.

Submitted manuscripts will be rigorously checked by the IAJ Editorial Office to comply with the IAJ writing format and content guidelines. Manuscripts, complied with the described process, will be reviewed by one member of the Editorial Board and one reviewer appointed by the IAJ Editor-in-Chief. The Editor-in-Chief has the authority to accept or reject submitted manuscripts based on the recommendations of the assigned Editorial Board member and reviewers for the manuscripts

#### INDEXING INFORMATION OF INDONESIAN AQUACULTURE JOURNAL

Indonesian Aquaculture Journal (http://ejournal-balitbang.kkp.go.id/index.php/iaj) has p-ISSN 0215-0883 and e-ISSN 2502-6577 that have been indexed in some indexers repute, among others: World Cat, Cross Ref, Scilit, Sherpa/Romeo, Indonesian Scientific Journal Database (ISJD), Google Scholar, Directory Open Access Journals (DOAJ), One Search Lancaster University, BASE, British Library, Mendeley, Science and Technology Index (SINTA), GARUDA, and Dimensions.

































# INDONESIAN AQUACULTURE JOURNAL

## Volume 13 Number 2, December 2018

RISTEKDIKTI Accreditation Number: 21/E/KPT/2018 IAJ Category 2 Accredited Journal is valid for five years (Volume 11 Number 1, 2016-Volume 15 Number 2, 2020)

Indonesian Aquaculture Journal publishes research results on various disciplines of aquaculture described in the Focus and Scope of the journal This journal publishes research articles twice a year and funded by the Research Center for Fisheries, Agency for Marine and Fisheries Research and Human Resources, Ministry of Marine Affairs and Fisheries

#### **EDITORS TEAM**

#### **Managing Director:**

Dr. Toni Ruchimat

#### **Editor-in-Chief:**

Prof. Dr. I Nyoman Adiasmara Giri (Fish Nutrition, Institute for Mariculture Research and Fisheries Extension, INA)

#### **Editorial Board:**

Prof. Dr. Ketut Sugama (Aquaculture, Research Center for Fisheries, INA)
Dr. Anang Hari Kristanto (Aquaculture, Institute for Freshwater Aquaculture Research and Fisheries Extension, INA)

Dr. Alimuddin (Biotechnology, Faculty of Fisheries and Marine Science-Bogor Agricultural University, INA)

Dr. Murwantoko (Disease and Fish Health, Gadjah Mada University, INA)

Dr. I Nyoman Radiarta (Aquatic Environment, Institute for Marine Observation Research, INA)
Prof. Dr. Mhd. Ikhwanuddin (Aquaculture, University Malaysia Terengganu, Malaysia)

Prof. Dr. Abol Munafi Ambok Bolong (Aquaculture, University Malaysia Terengganu, Malaysia)
Dr. K.H. Runte (Aquaculture, University of Kiel, Germany)

Prof., Ph.D Michael A Rice (Aquaculture, Dept of Fisheries, Animal & Veterinary Science, University of Rhode Island, USA)

Dr. Clive M. Jones (Aquaculture, James Cook University, Australia)

#### Language Editor:

Hatim Albasri, M.A.

#### **Assistant Editor:**

Dra. Endang Sriyati Ofan Bosman, S.Pi.

#### **Graphic Designer:**

Suprapti

#### **Editorial Office**

Diana Yulianti

#### Manuscript may be send to the publisher:

Indonesian Aquaculture Journal Research Center for Fisheries

Gedung BRSDM KP II, Jl. Pasir Putih II, Ancol Timur, Jakarta Utara 14430

Phone: (021) 64700928; Fax.: (021) 64700929

E-mail: publikasi.p4b@gmail.com; iaj.puslitbangkan@gmail.com Website: ejournal-balitbang.kkp.go.id/index.php/iaj

## PEER-REVIEWERS OF INDONESIAN AQUACULTURE JOURNAL

- 1. Dr. Michael A. Rice (Aquaculture, Departement of Fisheries, Animal, and Veterinary Science, USA)
- 2. Dr. Emmanuel Paradise (Ecology and Population Biology, Institute de Recherche pour le Developpement, France)
- 3. Dr. Munti Yuhana (Microbiology, Faculty of Fisheries and Marine Science, Bogor Agricultural University, INA)
- 4. Prof. Dr. Akhmad Mustafa (Aquatic Environment, Research Institute for Coastal Aquaculture and Fisheries Extension, INA)
- 5. Dr. Imron (Genetic, Research Institute for Fish Breeding, INA)
- 6. Dr. Hans Peter Saluz (Moleculer Fish Genetic, Hans Knoll Institute, Germany)
- 7. Dr. Katsumori Hatanaka (Spatial Modelling Aquaculture, Tokyo University of Agriculture, Japan)
- 8. Dr. Jesmond Sammut (Environmental Science, University of New South Wales, New South Wales, AU)
- 9. Prof. Dr. Haryanti (Genetic and Biotechnology, Institute for Mariculture Research and Fisheries Extension, INA)
- 10. Dr. Ketut Mahardika (Aquaculture, Institute for Mariculture Research and Fisheries Extension, INA)
- 11. Prof. Dr. Budi Prayitno (Aquaculture and Fish Health, Diponegoro University, INA)
- 12. Dr. Andi Parenrengi (Breeding, Research Institute for Coastal Aquaculture and Fisheries Extension, INA)
- 13. Dr. Irma Sita Arlyza (Molecular Ecology, Indonesian Institute of Science, INA)
- 14. Dr. Rudhy Gustiano (Genetic, Institute for Freshwater Aquaculture Research and Fisheries Extension, INA)
- 15. Prof. Dr. Ir. Ngurah N. Wiadnyana, DEA (Fisheries Ecology-Center for Fisheries Research, INA)
- 16. Dr. Nur Bambang, P.U. (Fish Nutrition, Faculty of Fisheries and Marine Science-Bogor Agricultural University, INA)
- 17. Dr. Tarunamulia (Aquatic Environment, Research Institute for Coastal Aquaculture and Fisheries Extension, INA)
- 18. Ali Reza Radkhah, M.Sc. (Aquaculture and Fisheries Biotechnology, Departement of Fisheries, University of Tehran, Iran)

## **ACKNOWLEDGEMENTS FOR PEER-REVIEWERS**

The Editor-in-Chief of Indonesian Aquaculture Journal (IAJ) would like to thank reviewers who have voluntarily participated in reviewing the articles published in this journal. Their participation has ensured the on-time publication of IAJ volumes. The reviewers who participated in the publication of IAJ Volume 13 Number 2, December 2018 are as follows:

- 1. Dr. Imron (Genetic, Research Institute for Fish Breeding, INA)
- 2. Ali Reza Radkhah, M.Sc. (Aquaculture and Fisheries Biotechnology, Departement of Fisheries, University of Tehran, Iran)
- 3. Dr. Indra Suharman (Fish Nutrition, Riau University, INA)
- 4. Prof. Dr. Haryanti (Genetic and Biotechnology, Institute for Mariculture Research and Fisheries Extension, INA)
- 5. Dr. Michael A. Rimmer (Aquaculture, University of the Sunshine Coast, Australia)
- 6. Dr. Irma Sita Arlyza (Molecular Ecology, Indonesian Institute of Science, INA)

#### **PREFACE**

Indonesian Aquaculture Journal (IAJ) has published high-quality research articles for 13 years and the current 2018 edition is IAJ Volume 13. The IAJ 2018 volumes are funded by the Research Center for Fisheries in the fiscal year of 2018. All published articles have gone through a complete cycle of the evaluation process by the Editorial Board, Reviewers, and Editorial Office.

Since 2018, the IAJ has made a significant improvement in managing and evaluating publication through the online Open Journal Systems (OJS). Some minor changes were introduced in IAJ including:

- 1. A written description of p-ISSN and e-ISSN at the bottom of the cover skin page, title page, and table of contents
- 2. Additional sheets for the list of reviewers, focus & scope of IAJ and Indexing Information
- 3. A gratitude sheet dedicated for reviewers involved in manuscript reviews of each issue
- 4. Each title sheet contains additional information regarding the website and email addresses as well a short description about IAJ.

These changes are described in the preface texts of each issue.

The Volume 13 Number 2, 2018 presents six fisheries research articles: Correlation of microsatellite DNA markers with growth traits in striped catfish (*Pangasianodon hypophthalmus*); Effects of different pH settings on growth and survival of common carp rajadanu strain; The effects of weaning time on the growth and survival of mud crab (*Scylla olivacea*); Growth characteristics of newly isolated Indonesian microalgae under different salinity; Isolation, characterization, and identification of proteolytic bacteria to improve protein digestibility of fish feed ingredients; and Use of different probiotics for prevention of vibriosis disease on tiger shrimp larvae reared in fiberglass tanks.

These scientific papers are expected to contribute to and fill the gap of the body of knowledge in the field of aquaculture. Most importantly, the information contained in the current publication can make a significant impact on the decision making of policy makers and managers to manage fisheries resources in Indonesia and worldwide. As the Editor-in-Chief, I would like to extend a sincere gratitude to the contributing researchers in this volume.

Editor-in-Chief

# **INDONESIAN AQUACULTURE JOURNAL**

# Volume 13 Number 2, December 2018

## **CONTENTS**

FOCUS AND SCOPE	i
EDITOR TEAM	ii
PEER-REVIEWERS	iii
ACKNOWLEDGEMENTS	iv
PREFACE	V
CONTENT	vi
Correlation of microsatellite DNA markers with growth traits in striped catfish (Pangasianodon hypophthalmus)	
By: Huria Marnis, Evi Tahapari, and Jadmiko Darmawan	51-56
Effects of different pH settings on growth and survival of common carp rajadanu strain By: Vitas Atmadi Prakoso and Deni Radona	57-61
The effects of weaning time on the growth and survival of mud crab ( <i>Scylla olivacea</i> )  By: Haryati, Yushinta Fujaya, and Early Septiningsih	63-69
Growth characteristics of newly isolated Indonesian microalgae under different salinity  By: Wa Iba, Michael A. Rice, Lucie Maranda, and Gary H. Wikfors	71-81
solation, characterization, and identification of proteolytic bacteria to improve protein digestibility of fish feed ingredients	
By: Mulyasari, Mas Tri Djoko Sunarno, and Lusi Herawati Suryaningrum	83-93
Use of different probiotics for prevention of vibriosis disease on tiger shrimp larvae reared in fiberglass tanks	
By: Nurbaya and Muharijadi Atmomarsono	95-101