

LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : PROSIDING INTERNASIONAL TERINDEKS SCOPUS

Judul Karya Ilmiah/Artikel : Low zinc serum levels and high blood lead levels among school-age children in coastal area

Jumlah Penulis : 4 (empat)

Status Pengusul : Penulis pertama/ penulis ke 4/ penulis korespondensi*

Penulis Karya Ilmiah : Pramono A., Panunggal B., Rahfiludin M.Z., Swastawati F.

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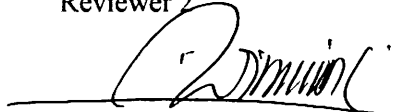
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Semarang, Februari 2020.
 Reviewer 2



Prof. Ir. Tri Winarni Agustini, M.Sc., Ph.D
 NIP. 19650821 199001 2 001

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Prof. Dr. Ir. Johannes Hutabarat, M.Sc.
 NIP. 19510323 197603 1 001



Certificate

This to certify that

Dr. Ir. Fronthea Swastawati, M.Sc

has contributed as

Presenter

in The 2nd International Conference on
Tropical and Coastal Region Eco-Development (ICTCRED) 2016
Bali, October 25th-27th, 2016

Director of Research and Community Service Institute
Diponegoro University,



Prof. Dr. rer. nat Heru Susanto, S.T., M.M., M.T.



Chair,

Munawar R

Dr. Munawar A. Riyadi

Source details

Feedback

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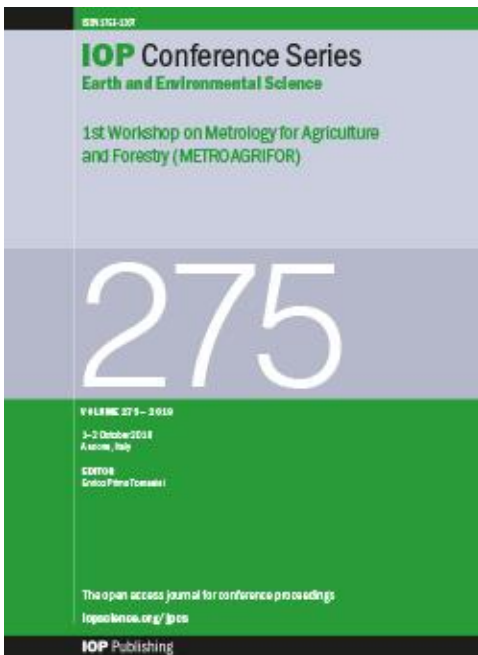
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Keynote speaker

The 2nd International Conference on Tropical and Coastal Region Eco Development (ICTCRED) 2016 was held by Research and Community Services Institute, Diponegoro University, Indonesia in Bali during 25-27 October 2016. Bali, the god island amid pleasant surroundings, was a delightful place for this conference. The 165 research papers were presented both by oral and poster presentation, and the conference had delivered many fruitful discussions and exchanges that contributed to the success of the conference. Among these papers, we selected 72 papers through intensive review by scientific committee. Participants from 10 countries made the conference truly international in scope and the presentations were split into two main conference areas, i.e., tropical life sciences and Coastal Region Developments. There were 7 plenary lectures covering the different areas of the conference: Prof. Ocky Karna Radjasa (Ministry of Research, Technology and Higher Education) talked on Policy on Coastal Research in Indonesia, Prof. Ambariyanto (Diponegoro University) on Update in Coastal Development, Prof. Makoto Tsuchiya (University of the Ryukyus – Japan) on Coral Reef Ecosystem, Prof. Peter Gell (Federation University of Australia – Australia) on Pollution and Coastal Environmental Changes in Tropical Region, Prof. Johan C. Winterwerp (TU Delft, Netherlands) on Restoring eroding mangrove-mud coasts through Building with Nature. These plenary speakers have given significant scientific contributions to the conference.

Participants have delivered their talks of valuable research outputs which are varies from extracting valuable compounds from marine environment and convert them to specialty products. During the presentation, marine products and their processing were also elaborated with developments in oceanography technology, coastal environment management and policies. These topics were more fruitful when researches in social science and its developments especially at the coastal area were also presented. These wide range of topics have colorized this conference.

Finally, it is appropriate that we record our thanks to our fellow members of the Organizing Committee and of the Scientific Committee for their work in maintaining high quality of papers and in encouraging participation from those areas. We are also indebted to those who served as chairman of Institute of Research and Community Services, Diponegoro University and Ministry of Research, Technology and Higher Education for their financial supports. Without their support, the conference could not have been the success that it was. We also acknowledge the authors themselves, without whose expert input there would have been no conference. The continuing success of this conference series means that planning can now proceed with confidence for the same event in 2017.

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[Isolation And Partial Characterization Of Bacteria Activity Associated With Gorgonian *Euplexaura* sp. Against Methicillin-Resistant *Staphylococcus aureus* \(MRSA\)](#)

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012057

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[Antioxidant and antibacterial activity of solid-liquid and enzyme-assisted extraction of phenolic compound from three species of tropical *Sargassum*](#)

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Understanding coastal processes to assist with coastal erosion management in Darwin Harbour, Northern Territory, Australia

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Abstract. Sand transport pathways in Darwin Harbour, Northern Territory, Australia, are being investigated to assist with coastal management. Coastal erosion, which threatens public and private infrastructure, is one of the major problems along the harbour beaches. A study of sediment transport is essential to identify the challenges encountered by the stakeholders in coastal management. Darwin Harbour, located in the tropical, cyclone prone area of Australia, was, until recently, considered a near pristine estuary. A semi-diurnal macro-tidal embayment, the tidal variation in the harbour reaches up to 8 m with a mean tidal range of 3.7 m. The beach morphology consists of sandy pocket beaches between coastal cliffs, sandbars, rocky shore platforms, tidal flats and mangrove fringes. A two-dimensional depth averaged finite-element hydrodynamic model (RMA-2), coupled with a sediment transport model (RMA-11) from Resource Modelling Associates, has been used to infer the sources and the depositional areas of sand in the harbour. Grain size distributions and geochemical analysis are also used to characterize the sand and its source(s). Initial results show that the beach sand is mostly of offshore origin with small sand input from the rivers. Potential supplementary sand sources are the eroded materials from the shore platforms and the rocky cliffs. Due to the rapid development in Darwin Harbour, this study is fundamental in understanding coastal processes to support decision making in coastal management, particularly in a macro-tidal, tropical estuary.

Keywords: Darwin Harbour, macro-tidal, sand transport, coastal erosion, RMA

1. Introduction

Coastal erosion is a natural phenomenon. In fact, coast lines change continually, controlled by the interaction of the local hydrodynamics and their morphology. Coastal change is a longstanding problem that mankind has had to deal with to provide safety from flooding and to protect transportation infrastructure. Conventionally, coastal erosion is managed locally using hard engineering approaches, such as sea walls or breakwaters, which do not guarantee good outcomes and often create erosion in other areas [1, 2]. These consequences often stem from engineering decisions that only consider the immediately affected area, underestimating the processes that are occurring in the wider coastal zone.



Antioxidant and antibacterial activity of solid-liquid and enzyme-assisted extraction of phenolic compound from three species of tropical *Sargassum*

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Abstract. *Sargassum* has been well acknowledged for the potential natural product of its phlorotannins. Solid-liquid extraction (SLE) is the most common method used to extract them. However, this method has some drawbacks such as low yield and toxic. An alternative ecofriendly method has been proposed, i.e. enzyme-assisted extraction (EAE), proven to be more efficient. The aim is to compare the efficiency of SLE and EAE concerning their extraction yield, total phenolic content and antioxidant activity. *S. aquifolium*, *S. ilicifolium* and *S. polycystum* were extracted using water, methanol, methanol 50%, and ethanol 75% and enzymes (Viscozyme and Protamex). Total phenolic content (TPC) was analyzed by Folin-Ciocalteu and antioxidant activity via DPPH and FRAP analysis. This study implied that bioactivity of *Sargassum* extracted with enzymes is better compared to the one using organic solvents.

Keywords: Conventional extraction, alternative extraction, brown algae, bioactivities, polyphenols

1. Introduction

As an archipelagic country located in the tropical zone and the coral triangle, Indonesia has been extensively known for its remarkable diversity of marine organisms. One of them is marine seaweed. There are three groups of marine seaweed that can be found throughout Indonesian water, namely, green, red and brown seaweed. For decades, the green and red seaweed, particularly from the genera *Kappaphycus* and *Gracillaria*, have been cultivated for their carrageenan and agar [1–3].

Marine seaweed is also distinguished by its polysaccharides [4,5] but also by its biologically active compounds that have been studied and proven to have promising potential for the nutraceutical, pharmaceutical and cosmeceutical industries [6–10]. Hence, these marine plants have attracted a lot attention during the exploration of alternative natural products. The natural products derived from seaweed offer a sustainable resource with an infinite application.

Among the other three, brown seaweed from the class of Phaeophyceae is one of marine plants that has not been fully explored and exploited in Indonesia despite of their abundance and their remarkable potential [11–17]. A number of previous studies have reported that polysaccharides and bioactive compounds from the brown seaweed showed an encouraging potency as source of natural product with



Sea Water Intrusion in Kaligawe Semarang Based on Resistivity Data

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Abstract. Semarang is a city on the north coast of the island of Java, Indonesia and it is lowland areas have experienced sea water intrusion. One of interesting area is Kaligawe which located at Eastern part of Semarang. Kaligawe has big population and industrial and it need water consumption. Excessive extraction of groundwater will be resulting height difference surface ground water to the surface of the sea water due to sea water intrusion. Electric resistivity method was used to detect for salt water intrusion. Dipole-dipole configuration was applied with 3 lines to get current, potential difference, and apparent resistivity from the field. 2D model has presented using Res2Dinv to get the true resistivity and the depth of each layer. A calibration of the model was conducted based on geological information. Result showed the subsurface area has 4 layers: sandstone, sandsilt, siltstone and clay. Moreover the sea water intrusion occurs in the Northwest, East and Southern part of the study area

1. Introduction

Kaligawe, which is located in Eastern Semarang Municipal Central Java Indonesia, is a village consisted by two main areas. The two are residencial area and industrial zone. the population of Kaligawe is 12.107 of people [1]. The high population and industrial activities in that zone cause a rising in ground water consumption. Some researches show fact that withdrawing ground water excessively may induce gap between the height of surface ground water and the surface of sea water then results saline substrate of sea water, such as Chloride, infiltrates into the ground water[2].

Geographically, Kaligawe lies on the North sea-coast of Java Island. Highly water usage in the coastal area leaves empty holes or pores in aquifer rocks, next it is potentially stimulate sea water intrusion[3][4]. Sea water infiltration into aquifer layer in the seaboard have been main attention since iy is generally a pollutant in freshwater [5]. Thus, understanding of sea water intrusion is urgently required for water and coastal resources management [6]. The intrusive movement of sea



Past and Future Ecosystem Change in the Coastal Zone

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Abstract. The coastal zone is in a constant state of flux. Long term records of change attest to high amplitude sea level changes. Relative stability though the Late Holocene has allowed for the evolution of barrier dune systems, estuaries and coastal lakes with associated plant and faunal associations. This evolution has been interspersed with changes in the balance between climate driven changes in outflow from catchments. These interactions have been considerably disturbed through the impacts of industrialised people who have diverted and consumed water and invested in infrastructure that has impacted on river flows and the tidal prism in estuaries. This has impacted their provisioning services to humans. It has also impacted their regulating services in that development along the coastline has impacted on the resilience of the littoral zone to absorb natural climate extremes. Looking from the past we can see the pathway to the future and more easily recognise the steps needed to avoid further coastal degradation. This will increasingly need to accommodate the impacts of future climate trends, increased climate extremes and rising seas. Coastal societies would do well to identify their long term pathway to adaptation to the challenges that lie ahead and plan to invest accordingly.

Keywords. estuaries, paleolimnology, climate change, hydroecology, sediments, nutrients, salinization

1. Introduction

The coastal zone is in a constant state of change. This is most evident through the daily cycles of the tides that, particularly in the macrotidal zones of the world, inundate and then strand the marine littoral zones. This alone demands that the biological communities affected by the rise and fall of tides be adaptable to inundation and exposure, and in estuaries, exposed variously by marine waters and those flowing from the hinterland which are usually fresh to oligosaline. This balance varies seasonally with, in temperate zones, wet seasons coinciding with destructive waves regimes leading to the opening of estuary mouths, while the dry season and associated constructive wave regimes lead to mouth closure and the establishment of lagoonal conditions. The consequences are a winter of tidal and river flushing with oxygenated water and a summer with little flow, stratification, hypersalinity and de-oxygenation. These seasonal patterns are taken to extreme under multi-year (e.g. El Nino Southern Oscillation) and even multi-decadal (Inter-decadal Pacific Oscillation) phases of wet and dry conditions exacerbating or subduing the contrasts between seasons. Further the frequency of these cycles extends out to multi-

