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*Prof. Mohammad Basyuni, S.Hut., M.Si., Ph.D. is a professor at the USU Faculty of Forestry who has a wealth of achievements. The man born on April 21, 1973, was named a World-Renowned Scientist. Some of the awards he has won include the World Class Professor Award 2020 Scheme B from the Ministry of Education and Culture, the Best Researcher 1 award from Universitas Sumatera Utara, the JSPS Core to Core 2020-2023 from the Japan Society for the Promotion of Science, and various other awards.*

*Prof. Basyuni earned his bachelor's degree from Bogor Agricultural University and graduated with a Bachelor of Forestry (S.Hut) in 1997. He then continued his studies at the same campus and graduated in 2000 as a master of science (M.Si). In 2005, Prof. Basyuni continued his Ph.D. at the Laboratory of Molecular Biotechnology, Center of Molecular Biosciences (COMB), University of the Ryukyus and received his Ph.D. in the United Graduate School of Agricultural Sciences, Kagoshima University on March 14, 2008.*

*For two years (2008-2010), Prof. Basyuni was a Japan Society for the Promotion of Science (JSPS) Postdoctoral Fellow under Host Researcher Prof. Shigeyuki Baba at the Tropical Biosphere Research Center (TBRC), University of the Ryukyus. Then for 6 months (May-November 2010), Prof. Basyuni was a Foreign Visiting Researcher at the same institution with host Prof. Hirosuke Oku. In October-December 2012, the author received a Post-doc at COMB with funding from SAME (Scheme for Academic and Mobility Exchange) from the Directorate of Education Dikti, Kemdikbud. In 2013-2015 during January-March, Prof. Basyuni was a Visiting Researcher at the Joint Research in TBRC, University of the Ryukyus.*

*In 2018-2022, the author received an international grant from Newton Fund/DIPI/LPDP as the principal investigator in Indonesia in collaboration with the University of Glasgow and Aberystwyth University, UK. Then from 2018 until 2023, he obtained JSPS Core to Core as an Indonesia Coordinator Project. Since April 1, 2020, Prof. Basyuni has been a full professor or Full Professor of Forest Biotechnology in the USU Faculty of Forestry Undergraduate Program in Forestry. Then in 2022, the author served as the Head of the Mangrove Center of Excellence (PUI) and received recognition as a National PUI at the Ministry of Education, Culture, Research, and Technology. In 2023, he successfully obtained a grant from the Mangrove Ecology Collaborative Research Center (PKR) in collaboration with the BRIN Ecology and Ethnobiology Research Center and was shortlisted for 12 proposals submitted by the Indonesian government for SATREPS 2023 funding.*

*In addition, he is also interested in researching mangrove restoration, blue carbon, DNA barcodes, and eDNA meta-barcoding in mangroves and their organisms.*

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## Publications

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2026

Jurnal internasional bereputasi

### **Genetic Reference Gaps Limit eDNA Metabarcoding and Biodiversity Monitoring of Tropical Mangrove Ecosystems**

MOHAMMAD BASYUNI , Tadashi Kajita , Venus Leopardas , Earl Kevin T. Cooper

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2026

Jurnal internasional bereputasi

### **Mangrove structure, composition, and distribution through restoration of Indonesia's mangrove: A systematic review**

MOHAMMAD BASYUNI , LUTHFI AZIZ MAHMUD SIREGAR , DIANA SOFIA HANAFIAH , SITI HALIMAH LAREKENG , Tadashi Kajita , Virni Budi Arifanti

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Jurnal internasional bereputasi

### **ANEMONE Global's First eDNA-Based Assessment: Insights Toward a**

# Standardized Global Monitoring Network

MOHAMMAD BASYUNI , Imane Sioud , Yuki Minegoshi , Tadashi Kajita , Oliver Berry , Jean Fall , Venus Leopardas , Alison KS Wee , Michio Kondoh

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## **i-Mangrove Blue Carbon Dashboard A mangrove-based climate solutions mapping tool to support high-integrity blue actions**

MOHAMMAD BASYUNI , Rudhi Pribadi , Sigit Sasmito , Catherine Lovelock

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## **Mapping Aboveground Carbon in Rehabilitated Mangrove: Evaluating the Performance of Regression Modelling with Satellite-Derived Vegetation Indices and Kriging Interpolation**

ELHAM SUMARGA , TATI SURYATI SYAMSUDIN , SITI HALIMAH LAREKENG , MOHAMMAD BASYUNI

2025

Buku referensi

## **Penurunan Merkuri Padi Sawah pada Lahan Tercemar**

ROSMAYATI , MOHAMMAD BASYUNI , REVANDY I M DAMANIK , VITRI RENNY TRIYANTI

2025

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## **Hydrological restoration of abandoned aquaculture ponds in North Kalimantan, Indonesia**

MOHAMMAD BASYUNI , RAHMAN ABDEL ROUF , A. AZNAN AZNAWI , ALFIAN MUBARAQ , RIZKA AMELIA

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Prosiding seminar internasional

## **Uncovering the potential of the Lumnitzera genus through bioinformatic analysis**

MOHAMMAD BASYUNI , DIANA SOFIA HANAFIAH , LUTHFI AZIZ MAHMUD SIREGAR

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## **Preface**

MOHAMMAD BASYUNI , IWAN RISNASARI

2025

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## **Identification of heavy metal resistance genes using bioinformatics in mangrove sediment bacteria**

T SABRINA , MARIANI BR SEMBIRING , MOHAMMAD BASYUNI

2025

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## **Identification of heavy metal resistance genes using bioinformatics in mangrove sediment bacteria**

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Jurnal internasional bereputasi

## **Diversity of invasive alien plants in the Universitas Sumatera Utara Arboretum, Deli Serdang, Indonesia**

ANDRY ADMAJA TARIGAN , GEORGE NATHANIEL , Shigeyuki Baba , MOHAMMAD BASYUNI

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## **Spatiotemporal assessment of human and climate pressures on blue carbon**

## ecosystems in Asia Pacific

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Jurnal nasional

### **Pemberdayaan Masyarakat Desa Perlis, Brandan Barat, Langkat melalui Kegiatan Pemulihan Mangrove dan Penyediaan Air Bersih**

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MASFRIA , SUMARDI , MOHAMMAD BASYUNI

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Buku referensi

## **Penurunan Merkuri Padi Sawah pada Lahan Tercemar melalui Varietas Toleran dan Biochar Termodifikasi**

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## **Physiological characteristics of IRR 400 series rubber clones (*Hevea brasiliensis* Muell. Arg.) under drought stress [version 4; peer review: 1 approved, 2 approved with reservations]**

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## **Spatial analysis of mangrove ecosystem dynamics in Banyuwangi: a geographically weighted regression approach**

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## **Pemberdayaan dan kemandirian Desa Binaan Bagan Kuala, Kabupaten Serdang Bedagai melalui inisiatif pengabdian masyarakat yang berfokus pada ekowisata dan pengembangan produk** ...

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## **Diversity and distribution of nitrifying bacteria play an important role in the nitrogen cycle in mangrove sediments**

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## **Improving soil carbon estimates of Philippine mangroves using localized organic matter to organic carbon equations**

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# MANAGEMENT OF GLYPHOSATE ISOPROPYLAMINE-RESISTANT GOOSEGRASS (*Eleusine indica*) BIOTYPES THROUGH PRE- AND POST-EMERGENCE HERBICIDES

DIANA SOFIA HANAFIAH , EDISON PURBA , Dr. Koko Tampubolon, S.P., M.Agr. , MOHAMMAD BASYUNI

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## Quantification of ecosystem services from mangrove silvofishery

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## Aboveground biomass and carbon stock estimation using UAV photogrammetry in Indonesian mangroves and other competing land uses

MOHAMMAD BASYUNI , SYAIFUL EDDY

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## Preliminary Identification of Local Maize Under Drought Stress By PEG-6000

NOVILDA ELIZABETH MUSTAMU , ALRIDIWIRSAH , MOHAMMAD BASYUNI , Dr. Koko Tampubolon, S.P., M.Agr.

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## SPAD Total Chlorophyll as an Initial Indicator of the Effect of 2,4-D Dimethyl Amine Herbicide for Lowland Rice and Barnyardgrass Weed

NOVILDA ELIZABETH MUSTAMU , ALRIDIWIRSAH , MOHAMMAD BASYUNI

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## Drought stress induced by polyethylene glycol (PEG) in local maize at the early seedling stage

Duraïd K.A. AL-Taey , Mohammad Mehdizadeh , NOVILDA ELIZABETH MUSTAMU , ALRIDIWIRSAH , MOHAMMAD BASYUNI

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## The Cluster of Local Maize Accessions Based on Seed Characteristics from North Sumatra

ALRIDIWIRSAH , NOVILDA ELIZABETH MUSTAMU , MOHAMMAD BASYUNI

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## The Similarity of Barnyardgrass Weed in Lowland Rice Fields Based on Seed Characteristics

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## Prospects and challenges of environmental DNA (eDNA) metabarcoding in mangrove restoration in Southeast Asia

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## Challenges and opportunities for achieving Sustainable Development Goals

## through restoration of Indonesia's mangroves

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### **eDNA envisaged conservation of IUCN threatened taxa of the tropical mangrove ecosystems**

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### **In silico approach: Prediction of ADMET, molecular docking, and QSPR of secondary metabolites in Mangroves**

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### **Macrozoobenthic community assemblage as key indicator for mangrove restoration success in North Sumatra and Aceh, Indonesia**

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### **Mangroves: Biodiversity, Livelihoods and Conservation**

MOHAMMAD BASYUNI

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### **GLYCOSYLATED FLAVONOID COMPOUND FROM COCOA PARASITE LEAVES (*Dendrophthoe pentandra* (L.) Mig.)**

LAMEK MARPAUNG , MOHAMMAD BASYUNI , HELMINA BR SEMBIRING

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### **Morphological Characters of Local Origin Durian (*Durio zibethinus* Murr.) Fruits and Seeds from Central Tapanuli Regency, North Sumatra, Indonesia**

MOHAMMAD BASYUNI , DIANA SOFIA HANAFIAH , ELISA JULIANTI

2019

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### **Salinity and subsequent freshwater influences on the growth, biomass, and polyisoprenoids distributi**

MOHAMMAD BASYUNI , Hiroshuke Oku , Hiroshi Sagami

2018

Jurnal internasional

### **Seedling Growth In Response To Seedling Growth Response Ofcocoa Cocoa (*Theobroma Cacao* L.) For For The Provision Ofguano Fertilizer And Mycorrhizal Organicfertilizer In TheÂ ...**

DAFNI MAWAR TARIGAN , SRI UTAMI , MOHAMMAD BASYUNI , AISAR NOVITA , HUSNI AULIA SIREGAR

2017

Jurnal internasional bereputasi

### **Distribution, occurrence, and cluster analysis of new polyprenyl acetones and**

## other polyisoprenoids

MOHAMMAD BASYUNI , Hirosuke Oku , Hiroshi Sagami

2017

Jurnal internasional bereputasi

### **Salinity Alters the Polyisoprenoid Alcohol Content and Composition of Both Salt-Secreting and Non**

Hiroshi Sagami , Hirosuke Oku , MOHAMMAD BASYUNI

2016

Jurnal internasional bereputasi

### **Diversity of polyisoprenoids in ten Okinawan mangroves**

Hiroshi Sagami , Hirosuke Oku , MOHAMMAD BASYUNI

2014

Buku lainnya

### **Melalui Penelitian BPK Aek Nauli Siap mendukung Pembangunan Hutan**

KANSIH SRI HARTINI , ARIDA SUSILOWATI , LUKMAN HAKIM , TITO SUCIPTO , RAHMAWATY , MOHAMMAD BASYUNI , AGUS PURWOKO , SITI LATIFAH , SAMSURI , RUDI HARTONO , PINDI PATANA

2012

Jurnal internasional bereputasi

### **Salinity increases the triterpenoid content of a salt secretor and a non-salt secretor mangrove**

Hirosuke Oku , MOHAMMAD BASYUNI

## Researches

2025

### **Eksplorasi dan aplikasi DNA Barkode dan eDNA metabarkoding untuk monitoring keragaman genetik dan fenotipik ekosistem mangrove Sumatera Utara**

MOHAMMAD BASYUNI , LUTHFI AZIZ MAHMUD SIREGAR , DIANA SOFIA HANAFIAH

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### **Report e asia**

SITI HALIMAH LAREKENG , MOHAMMAD BASYUNI

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### **Penerapan Kombinasi Bakteri Endogen dan Bio-Charcoal pada Sistem Raton Sorgum Manis di Tanah Salin**

MOHAMMAD BASYUNI , RINI SULISTIANI , ANGGRIA LESTAMI , DAFNI MAWAR TARIGAN , WAN ARFIANI BARUS , FAHMI PRAYOGA NASUTION , DIMAS ADITIA , AISYAH RANGKUTI

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### **Keanekaragaman dan Aktivitas Bakteri Nitrifikasi Berdasarkan Morfologi, Aktivitas Biomikia dan Molekuler pada Sedimen Mangrove Sumatera Utara**

MOHAMMAD BASYUNI , MARIANI BR SEMBIRING , T SABRINA

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MOHAMMAD BASYUNI , MARIANI BR SEMBIRING

2024

## **Pelaksanaan Program Pendaan Riset Pembanguna Berkelanjutan Skema Kerjasama Luar Negeri Batch 2 Tahun 2024**

AHMAD BAIQUNI RANGKUTI , MOHAMMAD BASYUNI , ARIDA SUSILOWATI , ERWIN RIYANTO ARDLI

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## **Aplikasi Formula Bakteri Endogen dengan Penambahan Bio- Charcoal pada Tanaman Sorgum Manis di Tanah Salin**

MOHAMMAD BASYUNI , RINI SULISTIANI , DAFNI MAWAR TARIGAN , WAN ARFIANI BARUS , MHD TRI ALVIN NAZRI , RAIHAN PRANANDA , Sutomo

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Penelitian Hibah Bersaing

## **Identifikasi dan Pengelolaan Resisten Gulma Jajagoan (*Echinochloa crus-galli*) pada Pertanaman Padi Sawah sebagai Upaya Ketahanan dan Keamanan Pangan**

ALRIDIWIRSAH , MOHAMMAD BASYUNI , Dr. Koko Tampubolon, S.P., M.Agr.

2023

Kerjasama Luar Negeri dan Publikasi Internasional

## **Application of eDNA metabarcoding in faunal biodiversity assessment of Indo-Pacific mangroves vulnerable to climate change**

MOHAMMAD BASYUNI , ERWIN RIYANTO ARDLI

2022

Penelitian Unggulan Perguruan Tinggi

## **Keragaman Mikrobioma Kemenyan Toba (*Styrax sumatrana*) dan Peranannya dalam Mekanisme Pertahanan Pohon**

MOHAMMAD BASYUNI , DENI ELFIATI , ARIDA SUSILOWATI

2022

Penelitian Hibah Bersaing

## **Identifikasi dan Pengelolaan Resisten Gulma Jajagoan (*Echinochloa crus-galli*) pada Pertanaman Padi Sawah sebagai Upaya Ketahanan dan Keamanan Pangan**

ALRIDIWIRSAH , MOHAMMAD BASYUNI , Dr. Koko Tampubolon, S.P., M.Agr.

2021

Penelitian Unggulan Perguruan Tinggi

## **Effectiveness and Efficacy of Vaccine on Mutated SARS-CoV-2 Virus and Post Vaccination Surveillance: A Narrative Review**

MOHAMMAD BASYUNI , ARIDA SUSILOWATI , IPANNA ENGGAR SUSETYA

2020

Penelitian Tim Pasca Sarjana

## **Variasi Somaklonal pada Tanaman Kelapa Sawit (*Elaeis Guineensis* Jacq.)**

## **dengan Metode Senyawa Polyisoprenoid**

MOHAMMAD BASYUNI , LUTHFI AZIZ MAHMUD SIREGAR , ERKY BEBY AYU KARTIKA

2020

Ipteks

### **Seleksi Molekuler dan Analisa Kimia Karakter Aktivitas Lipase Rendah pada Tanaman Kelapa Sawit (*Elaeis guineensis* Jacq).**

MOHAMMAD BASYUNI , LUTHFI AZIZ MAHMUD SIREGAR , NINA UNZILA ANGKAT

2018

Kerjasama Luar Negeri dan Publikasi Internasional

### **Molecular Cloning, Characterization And Expression of Polyisoprenoid Synthase Genes From Indonesian and Okinawan Mangrove Forest**

MOHAMMAD BASYUNI , NURDIN SULISTIYONO

2017

Kerjasama Luar Negeri dan Publikasi Internasional

### **Molecular Cloning, Characterization And Expression of Polyisoprenoid Synthase Genes From Indonesian and Okinawan Mangrove Forest**

MOHAMMAD BASYUNI , NURDIN SULISTIYONO

## **Community Services**

2025

### **Pengayaan Tanaman Mangrove dan Penguatan Pola Silvofishery untuk Mendukung Kesejahteraan Masyarakat dan Pencapaian SDGs di Desa Pasar Rawa**

MOHAMMAD BASYUNI , NURDIN SULISTIYONO

2025

### **MANGROVE PLANTATION FOR THE CONSERVATION OF BIODIVERSITY AND ENVIRONMENTAL SUSTAINABILITY**

MOHAMMAD BASYUNI , NELLY ANNA

2024

Ipteks Bagi Masyarakat

### **INTERNATIONAL COMMUNITY SERVICE PUSAT UNGGULAN ILMU PENGETAHUAN, TEKNOLOGI, DAN SAIN (IPTEK) PERGURUAN TINGGI (PUI-PT) MANGROVE TAHUN 2024**

MOHAMMAD BASYUNI , ARIDA SUSILOWATI

2024

Ipteks Bagi Masyarakat

### **Penanaman vegetasi mangrove dalam upaya pencegahan abrasi di Pantai Mangrove Nagalawan**

APRI HERI ISWANTO , MOHAMMAD BASYUNI , DENI ELFIATI , IWAN RISNASARI , TITO SUCIPTO , BUDI UTOMO , EVALINA HERAWATI , ARIF NURYAWAN , AFIFUDDIN DALIMUNTHE , LUTHFI HAKIM , RIDWANTI BATUBARA , YUNASFI , HARISYAH MANURUNG , RUDI HARTONO , NELLY ANNA

2024

### **Kegiatan Produktif Pemberantasan Penyakit Malaria di Desa Bagan Kuala, Kabupaten Serdang Bedagai**

MOHAMMAD BASYUNI , ORANG KAYA HASNANDA SYAHPUTRA

2023

Ipteks Bagi Masyarakat

### **“International Community Service for Conservation and Mangrove Ecosystem Service, Collaboration With Pusat Unggulan IPTEK PUI Mangrove (Center of Excellence for Mangrove) USU Faculty of Forestry Universitas Sumatera Utara (USU) PUI Neuromarketing AND PUI Diabetic Care & Tech Universitas Prima Indonesia (UNPRI**

MOHAMMAD BASYUNI , ARIDA SUSILOWATI

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2023

Ipteks

**Tim Pelaksana International Community Service Pusat Unggulan Ilmu Pengetahuan, Teknologi, dan SAIN (IPTEK) Perguruan Tinggi (PUI-PT) Mangrove Tahun 2023**

MOHAMMAD BASYUNI , ORANG KAYA HASNANDA SYAHPUTRA

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2023

**Kegiatan Program Desa Binaan di Desa Bagan Kuala Kecamatan Tanjung Beringin Kabupaten Serdang Bedagai**

MOHAMMAD BASYUNI , IWAN RISNASARI

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2023

Ipteks Bagi Masyarakat

**KEGIATAN PROGRAM DESA BINAAN DI DESA BAGAN KUALA KECAMATAN TANJUNG BERINGIN KABUPATEN SERDANG BEDAGAI**

MOHAMMAD BASYUNI , YUNASFI

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2023

Penelitian Dana Lokal Perguruan Tinggi

**International Community Service for Conservation and Mangrove Ecosystem Service, Collaboration with Pusat Unggulan IPTEK PUI Mangrove (Center of Excellence for Mangrove) USU Faculty of Forestry Universitas Sumatera Utara (USU) PUI Neuromarketing and PUI Diabetic Care and Tech Universitas Prima Indonesia**

AHMAD BAIQUNI RANGKUTI , MOHAMMAD BASYUNI

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2020

**Pembibitan dan Restorasi Mangrove di Desa Lubuk Kertang Kecamatan Brandan Barat, Kabupaten Langkat, Sumatera Utara**

AHMAD BAIQUNI RANGKUTI , MOHAMMAD BASYUNI , MOEHAR MARAGHIY HARAHAHAP , YUNASFI

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2014

Penelitian Kompetensi

**Keanekaragaman dan Fungsi Fisiologi Rantai Panjang Polyisoprenoid di Hutan Mangr**

2014

Ipteks Bagi Masyarakat

**IbM Teknologi Pemeliharaan Tanaman Mangrove Program Rehabilitasi**

2013

Ipteks Bagi Masyarakat

**IbM Aplikasi Teknologi Pembibitan Mangrove untuk Program Rehabilitasi**

2012

Penelitian Fundamental

**Karakterisasi Molekuler dan Analisis Keragaman Genetik Plasma Nutfah Aren (Areng**

2013

Penelitian Fundamental

**Investigasi Kandungan Isoprenoid dan Karakter Morfologi Spesies Mangrove Sekresi**

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## Intellectual Property Rights

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2023

Karya desain

**Analisa Ekosistem Mangrove untuk Mendukung Ekowisata Mangrove di Kabupaten Bangkalan**

ACHMAD FACHRUDDIN SYAH , MOHAMMAD BASYUNI

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2023

Paten nasional

**Metode aplikasi ekstrak daun gulma *Diplazium esculentum* dan *Rivina humilis* sebagai anti jamur *Ganoderma boninense* pada kelapa sawit**

LISNAWITA , EDISON PURBA , MOHAMMAD BASYUNI , WISMAROH SANNIWATI BR SARAGIH

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2023

Paten nasional

**METODE MENGEKSTRAKSI DAUN PIDADA (*Sonneratia caseolaris*) UNTUK MENGHASILKAN SENYAWA DERIVATIF POLIPRENIL ASETON**

MOHAMMAD BASYUNI

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2023

Paten nasional

**METODE MENGEKSTRAKSI DAUN PIDADA (*Sonneratia caseolaris*) UNTUK MENGHASILKAN SENYAWA DERIVATIF POLIPRENIL ASETON**

MOHAMMAD BASYUNI

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2020

Paten nasional

**METODE PENGIDENTIFIKASI JENIS BUAH KELAPA SAWIT MELALU I SENYAWA POLIISOPREN O I D YANG D IEKSTRAK DARI DAUN KELAPA SAWIT**

MOHAMMAD BASYUNI

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