

# B2(1)

*by* Tri Mulyaningsih

---

**Submission date:** 05-Apr-2023 08:48AM (UTC-0500)

**Submission ID:** 2056593770

**File name:** Lamp.\_B2\_1.pdf (3.34M)

**Word count:** 2685

**Character count:** 15433



To support global research during the COVID-19 pandemic, AIP Publishing is making our content freely available to scientists who register on Scitation. To gain access, please [log in](#) or [create an account](#) and then [click here](#) to activate your free access. You must be logged in to Scitation to activate your free access.

## Table of Contents

< PREV NEXT >

### PROCEEDINGS OF THE 2ND INTERNATIONAL CONFERENCE ON BIOSCIENCE, BIOTECHNOLOGY, AND BIOMETRICS 2019



Conference date: 13-14 August 2019  
Location: Lombok, Indonesia  
ISBN: 978-0-7354-1950-6  
Editors: Eka Sunarwidhi Prasedya and Ni Wayan Riyani Martyasari  
Volume number: 2199  
Published: Dec 23, 2019

DISPLAY: 20 50 100 all

### PRELIMINARY

🔒 Free . December 2019

#### Preface: Proceedings of the 2nd International Conference on Bioscience, Biotechnology, and Biometrics 2019 (ICBBB2019)

AIP Conference Proceedings 2199, 010001 (2019); <https://doi.org/10.1063/1.5141278>

📄 PDF ADD TO FAVORITES SHARE EXPORT CITATION

## INVITED PAPERS

 Free . December 2019

### **Drying behaviour of fermented Fijian *Theobroma cacao* using dehumidified air**

Rupantri Raju, Julian Heyes, Richard Archer and Qun Chen

AIP Conference Proceedings **2199**, 020001 (2019); <https://doi.org/10.1063/1.5141279>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


### **The kinetics of enzymes that involved in cassava fermentation produce by co-culture starter of two lactic acid bacteria**

Andri Frediansyah, Muhammad Kurniadi, Nurul Noviandi Nahdia Putri and Eka Sunarwidhi Prasedya

AIP Conference Proceedings **2199**, 020002 (2019); <https://doi.org/10.1063/1.5141280>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

### **Antioxidant activity of *Ulva lactuca* L. from different coastal locations of Lombok Island, Indonesia**

Eka Sunarwidhi Prasedya, Ni Wayan Riyani Martyasari, Rizkia Apriani, Sipti Mayshara, Rizka Azzahral Fanani and Haji Sunarpi

AIP Conference Proceedings **2199**, 020003 (2019); <https://doi.org/10.1063/1.5141281>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## Detection of Candidatus *Liberibacter asiaticus* in the relatively new area of citrus plantation (*Citrus spp.*) in the absent of insect vector *Diaphorina citri* Kuw in Taro Village, Gianyar, Bali, Indonesia

I. Gede Putu Wirawan, Putu Alita Dewi, I. Nyoman Wijaya and Wayan Adiartayasa

AIP Conference Proceedings 2199, 020004 (2019); <https://doi.org/10.1063/1.5141282>

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## New and noteworthy records of eaglewood from Buru, Moluccas, Indonesia

Tri Mulyaningsih and Isamu Yamada

AIP Conference Proceedings 2199, 020005 (2019); <https://doi.org/10.1063/1.5141283>

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


### CONTRIBUTED ORAL PAPERS Biometrics

 Free . December 2019

## The application of mathematical model drying of galangal (*Alpinagalanga* L.) using hybrid dryer equipment with rotary type of rack

Sukmawaty, Guyup Mahardian Dwi Putra, Diah Ajeng Setiawati, Hary Kurniawan and Ignatia Early Prasetyaning Reinhart

AIP Conference Proceedings 2199, 030001 (2019); <https://doi.org/10.1063/1.5141284>

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Logistic model of abalon's length growth in Sekotong, West Lombok

Marliadi Susanto, Mamika Ujjanita Romdhini, Siti Raudhatul Kamali and Laya Zurfani

AIP Conference Proceedings **2199**, 030002 (2019); <https://doi.org/10.1063/1.5141285>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## Remote monitoring systems in greenhouse based on NodeMCU ESP8266 microcontroller and Android


Yuliana Astutik, Murad, Guyup Mahardian Dwi Putra and Diah Ajeng Setiawati

AIP Conference Proceedings **2199**, 030003 (2019); <https://doi.org/10.1063/1.5141286>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

### CONTRIBUTED ORAL PAPERS Agriculture

 Free . December 2019


## Rice-husk biochar for better yield of lowland rainfed rice in Lombok, Indonesia

Lia Hadiawati, Titin Sugianti and Yanti Triguna

AIP Conference Proceedings **2199**, 040001 (2019); <https://doi.org/10.1063/1.5141288>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## **Photosynthate accumulation and distribution on soybean crop during vegetative and generative phases influenced by phosphor and organic fertilizers**

Nani Herawati, Ai Rosah Aisah and Baiq Nurul Hidayah

AIP Conference Proceedings **2199**, 040002 (2019); <https://doi.org/10.1063/1.5141289>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## **Effect of two different planting patterns on performance of four maize varieties under rainfed conditions**

Khaerul Ihwan, I. Wayan Sudika and I. Komang Damar Jaya

AIP Conference Proceedings **2199**, 040003 (2019); <https://doi.org/10.1063/1.5141290>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## **Implementation of integrated ecologically based rodent management and its effectiveness to protect farmers irrigated rice crop in Karawang, West Java – Indonesia**

Nur 'Aini Herawati and Tedi Purnawan

AIP Conference Proceedings **2199**, 040004 (2019); <https://doi.org/10.1063/1.5141291>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Induction of insensitive peanut somatic embryo to medium containing culture filtrate from various races of *Sclerotium rolfsii* and plantlet regeneration

A. Farid Hemon, Sumarjan and Abdurrahman Hanafi

AIP Conference Proceedings **2199**, 040005 (2019); <https://doi.org/10.1063/1.5141292>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## Rice production and the empowerment of farmers in the subdistrict of Pallangga, Gowa Regency, South Sulawesi Province

Farra Safira, Muhammad Dimyati and Astrid Damayanti

AIP Conference Proceedings **2199**, 040006 (2019); <https://doi.org/10.1063/1.5141293>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## Plant pathogenic fungi attacking wheat (*Triticum aestivum* L.) grown at medium altitude of East Lombok, Indonesia

Baiq Erika Puri Rinjani, Mohamad Taufik Fauzi and Mery Windarningsih

AIP Conference Proceedings **2199**, 040007 (2019); <https://doi.org/10.1063/1.5141294>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## **Mango off-season technology (MOST): Innovative, applicable, adaptive to climate change, and brings many positive impacts**

Zainuri, Taslim Sjah, Nurrachman and Candra Ayu

AIP Conference Proceedings **2199**, 040008 (2019); <https://doi.org/10.1063/1.5141295>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Application bio-fertilizers to increase yields of zero-tillage soybean of two varieties under different planting distances in dry season on vertisol land of Central Lombok, Indonesia**

W. Wangiyana and N. Farida

AIP Conference Proceedings **2199**, 040009 (2019); <https://doi.org/10.1063/1.5141296>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## **Identification of virus causing the yellow leaf curl diseases on chili pepper in Lombok Island by PCR-RFLP technique**


Mery Windarningsih

AIP Conference Proceedings **2199**, 040010 (2019); <https://doi.org/10.1063/1.5141297>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION




 Free . December 2019

## The effect of grain mass variations on drying time by adding a pipe heat exchanger to a fluidized bed dryer

Syahrul, A. D. Cahyono, M. Mirmanto, H. S. Tira, Sukmawaty and G. M. D. Putra

AIP Conference Proceedings **2199**, 040011 (2019); <https://doi.org/10.1063/1.5141298>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

**CONTRIBUTED ORAL PAPERS Bioscience**

 Free . December 2019

## Innovative natural product chemistry laboratory: Isolation of artelastin from *Artocarpus scortechinii*

Aliefman Hakim, A. Wahab Jufri and Jamaluddin

AIP Conference Proceedings **2199**, 050001 (2019); <https://doi.org/10.1063/1.5141299>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## Growth, phytochemical properties, and antioxidant activity of *in vitro*-gamma irradiated *Tacca leontopetaloides* (L.) Kuntze

Betalini Widhi Hapsari, Andri Fadillah Martin, Evan Maulana and Tri Muji Ermayanti

AIP Conference Proceedings **2199**, 050002 (2019); <https://doi.org/10.1063/1.5141300>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## The growth of microalgae *Chlorococcum* sp. isolated from Ampenan estuary of Lombok Island in Walne's medium

Dina Soes Putri, Sri Puji Astuti and Siti Alaa

AIP Conference Proceedings **2199**, 050003 (2019); <https://doi.org/10.1063/1.5141301>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## *Megapodius reinwardt* conservation based on ecological knowledge of local people to support sustainable ecotourism on Moyo Island

K. Khairuddin and M. Yamin

AIP Conference Proceedings **2199**, 050004 (2019); <https://doi.org/10.1063/1.5141302>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## The record of *Cristatogobius* (*Teleostei: Gobiidae*) in Indonesia

Novita Tri Artiningrum, Dara Puspita Anggraini and Yuliadi Zamroni

AIP Conference Proceedings **2199**, 050005 (2019); <https://doi.org/10.1063/1.5141303>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## **Fecal egg count reduction test (FECRT) for measurement of gastrointestinal helminth resistance to anthelmintic of Bali cattle in North Lombok**

Kholik, Rista Ranggalan Putri, Adek Livia Yunita Ningrum, Erlina Septiyani, Fernando Jose I. C. Situmorang, Mashur and Candra Dwi Atma

AIP Conference Proceedings **2199**, 050006 (2019); <https://doi.org/10.1063/1.5141304>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## **Implementation of health management of a beef cattle feed on the collective cage based smallholder farming in Lombok Island**

Mashur, Dina Oktaviana, Kholik and Unsunidhal

AIP Conference Proceedings **2199**, 050007 (2019); <https://doi.org/10.1063/1.5141305>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **The effect of enriched perilla seed (*Perilla frutescens* L.) in the diets on percentage of carcass and non-carcass, chemical quality, and levels of $\alpha$ -linoleic acid (ALA) of meat ducks**

Rendi Fathoni Hadi, Sudiyono, S. N. Jannah and W. Indriyani

AIP Conference Proceedings **2199**, 050008 (2019); <https://doi.org/10.1063/1.5141306>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## **The effect of fermented complete feed based on local feed resources on weight gain of female Peranakan Etawah goats in Samigaluh Subdistrict**

Suhendra Pakpahan and Ratih Restiani

AIP Conference Proceedings **2199**, 050009 (2019); <https://doi.org/10.1063/1.5141307>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## **The livelihoods of local communities: Evidence success of mangrove conservation on the coastal of East Lombok Indonesia**

Agil Al Idrus, Abdul Syukur and Lalu Zulkifli

AIP Conference Proceedings **2199**, 050010 (2019); <https://doi.org/10.1063/1.5141308>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Genetically engineered food products threaten human health: A comprehensive research needed**


Mahrus

AIP Conference Proceedings **2199**, 050011 (2019); <https://doi.org/10.1063/1.5141309>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

**CONTRIBUTED ORAL PAPERS Health and Food**


 Free . December 2019


## The effects of temperature and roasting time on the quality of ground Robusta coffee (*Coffea robusta*) using *Gene Café* roaster

Satrijo Saloko, Yeni Sulastri, Murad and Mira Amalia Rinjani

AIP Conference Proceedings **2199**, 060001 (2019); <https://doi.org/10.1063/1.5141310>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Formulation of flavor enhancer from common barb (*Rasbora jacobsoni*) protein hydrolysate

Y. Witono, R. R. Fauziah, W. S. Windrati, I. Taruna, L. Azkiyah and R. P. Wijayanti

AIP Conference Proceedings **2199**, 060002 (2019); <https://doi.org/10.1063/1.5141311>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Formulation of flavor enhancer from common barb (*Rasbora jacobsoni*) protein hydrolysate

Y. Witono, R. R. Fauziah, W. S. Windrati, I. Taruna, L. Azkiyah and R. P. Wijayanti

AIP Conference Proceedings **2199**, 060002 (2019); <https://doi.org/10.1063/1.5141311>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Comparative antioxidant activity of *Brucea javanica* (L) Merr seed extract derived from maceration and soxhletation method**

Widia Nila Risnadewi, Handa Muliastari, Candra Dwipayana Hamdin and Yayuk Andayani

AIP Conference Proceedings **2199**, 060003 (2019); <https://doi.org/10.1063/1.5141312>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Histological pattern on pancreas and liver of diabetic rats after treatment of eugenol isolated from leaves of *Syzygium aromaticum***

Candra D. Hamdin, Sinta Wahyu Utami, Handa Muliastari, Eka Sunarwidhi Prasedya and I. Made Sudarma

AIP Conference Proceedings **2199**, 060004 (2019); <https://doi.org/10.1063/1.5141313>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## **The proposed mechanism of action of *Brucea javanica* (L) Merr seed in experimentally diabetic rats**

Handa Muliastari, Candra Dwipayana Hamdin, Nidaul Aulia, Indah Hariyati and Muhsinul Ihsan

AIP Conference Proceedings **2199**, 060005 (2019); <https://doi.org/10.1063/1.5141314>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## First detection of Varroosis on honey bee (*Apis cerana*) in bee farm of forestry business training and apprenticeship institution (LPPK) Wanawiyata Widyakarya Lingsar District

Heri Kurniawan, Alfiana Laili Dwi Agustin, Novarina Sulsia Ista'in Ningtiyas and Kholik

AIP Conference Proceedings **2199**, 070002 (2019); <https://doi.org/10.1063/1.5141316>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Evaluation of land suitability and productivity of rice fields at Gunung Sewu Karst (Case study: Ponjong and Semanu Sub-district, Gunungkidul Regency)


Nur Laily Romadhotul Husna, Astrid Damayanti, Taquuddin and Tuty Handayani

AIP Conference Proceedings **2199**, 070003 (2019); <https://doi.org/10.1063/1.5141317>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

### CONTRIBUTED POSTER PAPERS

 Free . December 2019


## The effect of expired bread supplementation in local sheep rations on rumen fermentability and digestibility value *in vitro*

Aqni Hanifa and Susi Dwi Widyawati

AIP Conference Proceedings **2199**, 070001 (2019); <https://doi.org/10.1063/1.5141315>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## First detection of Varroosis on honey bee (*Apis cerana*) in bee farm of forestry business training and apprenticeship institution (LPPK) Wanawiyata Widyakarya Lingsar District

Heri Kurniawan, Alfiana Laili Dwi Agustin, Novarina Sulsia Ista'in Ningtias and Kholik

AIP Conference Proceedings 2199, 070002 (2019); <https://doi.org/10.1063/1.5141316>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## Evaluation of land suitability and productivity of rice fields at Gunung Sewu Karst (Case study: Ponjong and Semanu Sub-district, Gunungkidul Regency)

Nur Laily Romadhotul Husna, Astrid Damayanti, Taquyuddin and Tuty Handayani

AIP Conference Proceedings 2199, 070003 (2019); <https://doi.org/10.1063/1.5141317>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## Effect of inorganic fertilizer and brown alga solid extract on growth and yield of rice plants


Haji Sunarpi, Sonia Ardilla Pebriani, Yogi Ambana, Fadhillah Eka Putri, Aluh Nikmatullah, Mursal Ghazali, Rina Kurnianingsih and Eka Sunarwidhi Prasedya

AIP Conference Proceedings 2199, 070006 (2019); <https://doi.org/10.1063/1.5141320>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION




 Free . December 2019


## Effect of solid and liquid extract of *Sargassum crassifolium* on growth and yield of rice plant

Eka S. Prasedya, B. A. F. D. Geraldine, N. N. N. Putri, A. S. Abidin, A. Jupri and H. Sunarpi

AIP Conference Proceedings **2199**, 070007 (2019); <https://doi.org/10.1063/1.5141321>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## The use of brown algae extract to extend shelf life and improve post harvest quality of tomato fruit

Sri Widyastuti, Brigitta A. F. D. Geraldine, Anggit Listyacahyani Sunarwidhi, Mutia Devi Ariyana, Eka Sunarwidhi Prasedya and Haji Sunarpi

AIP Conference Proceedings **2199**, 070008 (2019); <https://doi.org/10.1063/1.5141322>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## Growth and yield of rice plants sprayed with *Sargassum polycystum* extracted with different of concentration

Ahmad Jupri, Rizka Azzahral Fanani, Sundari Maulinda Syafitri, Sipti Mayshara, Nurijawati, Sonia Ardilla Pebriani and Haji Sunarpi

AIP Conference Proceedings **2199**, 070009 (2019); <https://doi.org/10.1063/1.5141323>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## The evidence suggesting that *Turbinaria murayana* extract induce remobilization of macromolecule from leave to grain of rice plants

Haji Sunarpi, Nurul Noviandi Nahdia Putri, Yogi Ambana, Aluh Nikmatullah, Suparman and Eka Sunarwidhi Prasedya

AIP Conference Proceedings **2199**, 070010 (2019); <https://doi.org/10.1063/1.5141324>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019


## Preparation and characterization of self-nanoemulsifying drug delivery system (SNEDDS) from *Moringa oleifera* L. and *Cassia alata* L. leaves extracts

Suryani, Wa Ode Sitti Zubaydah, Muhammad Handoyo Sahumena, Siti Adawia, Ririn Wahyuni, Andi Nafisah Tendri Adjeng, Michrun Nisa, Henny Kasmawati, Sunandar Ihsan, Ruslin and Muhammad Aswan

AIP Conference Proceedings **2199**, 070011 (2019); <https://doi.org/10.1063/1.5141325>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019


## Tannin concentrations of Gyrinops tea with different leaf processing methods and addition of herbal medicine ingredients

I. Gde Adi Suryawan Wangiyana, Sawaludin, Wahyu Yuniati Nizar and Wayan Wangiyana

AIP Conference Proceedings **2199**, 070012 (2019); <https://doi.org/10.1063/1.5141326>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Coral *Echinoporalamellosa* hosts multiple clades of symbionts in Western Alas Strait, Indonesia**

Imam Bachtiar, M. Irsyad A. Ghafari, Ibadur Rahman, Baiq Hilda and Mahrus

AIP Conference Proceedings **2199**, 070013 (2019); <https://doi.org/10.1063/1.5141327>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Purification of polyclonal antibody against pork extracts antigens using protein A column as material for developing halal food detection kit**

Nurhaerani, Wayan Wariata, Djoko Kisworo and Sulaiman Ngongu Depamede

AIP Conference Proceedings **2199**, 070014 (2019); <https://doi.org/10.1063/1.5141328>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## **Incidence and characteristics of anemia among patients with nasopharyngeal carcinoma in Lombok, Indonesia**

Hamsu Kadriyan, Mochammad Alfian Sulaksana, Ima Arum Lestarini, Ni Ketut Susilawati, Abdul Qadar Punagi, Nova Audry L. Pieter and Masyita Gaffar

AIP Conference Proceedings **2199**, 070015 (2019); <https://doi.org/10.1063/1.5141329>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION


 Free . December 2019

## **Role of moss on improving physical characteristics of entisols, nutrient uptake and growth of corn and green beans**

Mahrup, I. Gusti Made Kusnarta, Mansur Ma'shum and Fahrudin

AIP Conference Proceedings **2199**, 070016 (2019); <https://doi.org/10.1063/1.5141330>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

 Free . December 2019

## **Sem-sterile culture of *Gracilaria salicornia* seaweed (parental) on various media**

Salnida Yuniarti Lumbessy

AIP Conference Proceedings **2199**, 070017 (2019); <https://doi.org/10.1063/1.5141331>

---

SHOW ABSTRACT  PDF ADD TO FAVORITES SHARE EXPORT CITATION

- AIP Conference Proceedings , [Volume 2199, Issue 1](#) >
- 10.1063/1.5141283

Published Online: 23 December 2019

AIP Conference Proceedings **2199**, 020005 (2019); <https://doi.org/10.1063/1.5141283>

## New and noteworthy records of eaglewood from Buru, Moluccas, Indonesia

Tri Mulyaningsih<sup>1,a)</sup> and Isamu Yamada<sup>2</sup>

3

<sup>1</sup>Faculty of Mathematics and Natural Sciences, Universitas Mataram, Indonesia

<sup>2</sup>Center for Southeast Asian Studies (CSEAS) Kyoto University, Japan

<sup>a)</sup>Corresponding author: [trimulya@unram.ac.id](mailto:trimulya@unram.ac.id)

### Abstract

In the exploration of eaglewood species in Buru Island, Maluku Islands, Indonesia on February 1-5, 2017, three noteworthy eaglewood species were found. One species was *Gyrinops moluccana* (Miq.) Bail in Namrinat village and Tikbary village, Namrole district, South Buru. This species has been mentioned in 1959 by Hou and Keliopas in 2013, however they were found in Kayeli area, North Buru. Three other species of eaglewood were new records to Buru. Two newly recorded species, first *Gyrinops decipiens* Ding Hou that was found at Waeduna Mount, Bara village, Aer Buaya district, North Buru and second *Gyrinops salicifolia* Ridl. from Tikbary village, Namrole district, South Buru. One genus was a new record to Buru island, namely *Aquilaria*. Its species was *Aquilaria filaria* (Oken) Merr. that was found together with *G. salicifolia* in Tikbary village, Namrole district, South Buru.

### REFERENCES

1. Hou, *Flora Malesiana* **6**(1): 1–42 (1960). [Google Scholar](#)
2. *The Plant List*. Version 1.1. Published on the Internet; [http://www.theplantlist.org/tpl1.1/search?q=Gyrinops\(2013\),\(accessed August 4, 2019\)](http://www.theplantlist.org/tpl1.1/search?q=Gyrinops(2013),(accessed August 4, 2019)). [Google Scholar](#)
3. T. Mulyaningsih & I. Yamada. Two New species of *Gyrinops* (Thymelaeaceae) from North Celebes, Indonesia. Paper of SAGE 2017, Bogor, (Augusts 28-31, 2017). [Google Scholar](#)
4. T. Mulyaningsih, D. Marsono, Sumardi, & I. Yamada. Selection of Superior Breeding Intraspecies Gaharu of *Gyrinops versteegii* (Gilg) Domke. *Journal of Agricultural Science and Technology* **B 4**, 485–492(2014). [Google Scholar](#)

5. K. Keliopas, K. Neville, H. Charlie, F. Sepus, S. Tri, & B. Hendrik. The biodiversity and ecology on the Buru island; Important value of conservation and environmentally manage Proceedings International Seminar "Food Sovereignty and Natural Resources in Archipelago Region" Union of Maluku Students (Permama) and IPB, Bogor (2013). [Google Scholar](#)
6. A. Susilo, T. Kalima, & E. Santoso. Panduan lapangan pengenalan jenis pohon penghasil gaharu *Aquilaria* spp. di Indonesia. Pusat Penelitian dan Pengembangan Konservasi dan Rehabilitasi International Tropical Timber Organization (ITTO) – CITES Phase II Project (2014). [Google Scholar](#)
7. T. Mulyaningsih, I. Yamada, Notes on some of agarwood in Nusa Tenggara, Celebes and West Papua, in: Natural Resource Management and Socio-Economic Transformation under the Decentralization in Indonesia, *Toward Sulawesi Area Studies*, Center for Southeast Asian Studies Kyoto University (CSEAS), Kyoto (2008). [Google Scholar](#)
8. B. P. Gunn, P. Stevens, M. Singadan, L. Sunari & P. Chatterton. Eaglewood in Papua New Guinea. Proceeding of the first International Agarwood Conference. Tropical Rainforest Project, Vietnam (2003). [Google Scholar](#)
9. T. Mulyaningsih & I. Yamada. Tree species of *Aquilaria* (Thymelaeaceae) from Borneo Indonesia. AIP Conference Proceedings 2023, Editors by T. Mart *et al.* (American Institute of Physics, Melville, NY, 2018), pp. 111–115. [Google Scholar](#)
10. *The Plant List*. Version 1.1. Published on the Internet; <http://www.theplantlist.org/tpl1.1/search?q=Aquilaria> (2013), (accessed August 4, 2019). [Google Scholar](#)
11. A. E. Radford, W. C. Dickson, J. M. Massey, and C. R. Bell, *Vascular Plant Systematics* (Harper & Row, New York, 1974). [Google Scholar](#)
12. M. G. Simpson, *Plant Systematics* (Academic Press, Amsterdam, 2006). [Google Scholar](#)
13. B.D. Grimes. Chapter 6. Mapping Buru: The Politics of Territory and Settlement on an Eastern Indonesian Island. In T. Reuter (ed.). *Sharing the earth, Dividing the Land. Land and territory in the Austronesian world*. (ANU E Press. Canberra, 2006), pp. 135–156. [Google Scholar](#)
14. Published by AIP Publishing.



## New and noteworthy records of eaglewood from Buru, Moluccas, Indonesia

Cite as: AIP Conference Proceedings **2199**, 020005 (2019); <https://doi.org/10.1063/1.5141283>

Published Online: 23 December 2019

Tri Mulyaningsih, and Isamu Yamada



View Online



Export Citation

### ARTICLES YOU MAY BE INTERESTED IN

[Empiric model of abalon's length growth in Sekotong, West Lombok](#)

AIP Conference Proceedings **2199**, 030002 (2019); <https://doi.org/10.1063/1.5141285>

[Sequential fuzzy association rule mining algorithm for plants environment classification using internet of things](#)

AIP Conference Proceedings **2199**, 030004 (2019); <https://doi.org/10.1063/1.5141287>

[Drying behaviour of fermented Fijian Theobroma cacao using dehumidified air](#)

AIP Conference Proceedings **2199**, 020001 (2019); <https://doi.org/10.1063/1.5141279>



Lock-in Amplifiers

Zurich Instruments

Watch the Video

AIP Conference Proceedings **2199**, 020005 (2019); <https://doi.org/10.1063/1.5141283>

**2199**, 020005

© 2019 Author(s).

# New and Noteworthy Records of Eaglewood from Buru, Moluccas, Indonesia

Tri Mulyaningsih<sup>1,a)</sup> and Isamu Yamada<sup>2</sup>

<sup>1</sup>Faculty of Mathematics and Natural Sciences, Universitas Mataram, Indonesia

<sup>2</sup>Center for Southeast Asian Studies (CSEAS) Kyoto University, Japan

<sup>a)</sup> Corresponding author: [trimulya@unram.ac.id](mailto:trimulya@unram.ac.id)

**Abstract.** In the exploration of eaglewood species in Buru Island, Maluku Islands, Indonesia on February 1-5, 2017, three noteworthy eaglewood species were found. One species was *Gyrinops moluccana* (Miq.) Baill in Namrinat village and Tikbary village, Namrole district, South Buru. This species has been mentioned in 1959 by Hou and Keliopas in 2013, however they were found in Kayeli area, North Buru. Three other species of eaglewood were new records to Buru. Two newly recorded species, first *Gyrinops decipiens* Ding Hou that was found at Waeduna Mount, Bara village, Aer Buaya district, North Buru and second *Gyrinops salicifolia* Ridl. from Tikbary village, Namrole district, South Buru. One genus was a new record to Buru island, namely *Aquilaria*. Its species was *Aquilaria filaria* (Oken) Merr. that was found together with *G. salicifolia* in Tikbary village, Namrole district, South Buru.

## INTRODUCTION

*Gyrinops* and *Aquilaria* are a member of the Thymelaeaceae family, belonging to the subfamily of Aquiroideae [1]. The genus *Gyrinops* consists of as many as 9 species [1,2]. In 2017 the species belonging to this genus increased by two new species that come from Minahasa [3]. The geographical distribution of the genus is confined to the Wallacea region [1,4,3]. One of this species, *G. moluccana* was spread in Moluccas islands, among of them are Hamahera, Morotai and in Keyeli Buru [1,5]. Others species were *G. decipiens* that was found growing in Celebes and *G. salicifolia* was distributed in New Guinea, however both species were not recorded in Buru island [1,6,7,8]. While the genus *Aquilaria* has been recorded to consist of 47 species but only 20 species included accepted species. In 2018, in North Borneo was found 3 new species [9,10]. Most of these species of the genus was distributed on the west of Wallacea line, except two species of *A. cumingiana*, and *A. filaria*. The species of *A. filaria* spread out to Moluccas (Morotai, Ceram, and Ambon), and New Guinea (Sorong, Babo, and Kapor), but this genus was not recorded yet in Buru [1,6,8], Maluku, also known as the Moluccas, belongs to Wallacea biogeographical region. Those specimens belonging to *G. decipiens*, *G. salicifolia*, and *A. filaria* have been recently collected in the north west part of the Buru Island for the first species and both others species from south east Buru island. The characters of these specimens were found to match to *G. decipiens*, *G. salicifolia*, and *A. filaria*. This discovery becomes the first record of the genus of *Aquilaria* and 2 species of genus *Gyrinops* for this island. The description of these species is prepared based on recently collected material and presented in this account.

## MATERIALS AND METHODS

The specimens of eaglewood have been collected on February 1-5, 2017, from Bara village, Aer Buaya district, north west Buru, Palmitte village, Namrinat village and Tikbary village, Namrore, south east Buru, Maluku Islands, Indonesia. The specimens have been preserved in the form of dried herbarium specimens and supplemented with spirit material for flowers. The specimens were later deposited in the herbarium of Mataram University, Mataram, Lombok, West Nusa Tenggara, Indonesia (MUL). Identification of these specimens were used the relevant references [1,11,12]. A morphological description has been prepared based on materials from the collections of Buru Island.



### 3 RESULTS AND DISCUSSION

#### Key to Species

1. a. Leaves linear.....2  
b. Leaves elliptic, obovate-oblong.....3
2. a. Leaves > 15 cm length, >2.5cm in diameter, nerves >60 .....*G. moluccana*  
b. Leaves < 4 cm length, < 1 cm in diameter, nerves <60.....*G. salicifolia*
3. a. Petioles glabrous, leaves obovate or obovate-oblong, tip acute or emarginated up to 0.4 cm length, margin undulate, nerves <50.....*G. decipiens*  
b. Petioles tomentose, leaves elliptic or lanceolate, tip cuspidate or caudate up to 1.6 cm length, margin entire, nerves up to >50.....*A. filaria*

#### Description

*Gyrinops moluccana* (Miq.) Baill. *Adansonia* 11 (1875) 326; Gilg in E. & P. Pfl. Fam. 3, 6a (1894) 225; Boerl. Handl. 3 (1900) 111; Quis. J.Am. Arb. 27 (1946) 404.

Shrub, 2 m height, 3 cm diameter, bark light brown with grey spot. Young branches tomentose. Leaves chartaceous, glabrous on the upper surface and tomentose on the lower surface, lanceolate-oblong, 16.6-18.3 cm by 2.7-3.95 cm, base obtuse; apex acuminate-caudate up to 0.9-1.9 cm; nerves 31-62 pairs, slightly curved and ascending, at c.60° to the midrib, distinct or visible beneath, indistinct above; veins parallel; Petiole tomentose beneath, 0.4-0.55 cm by 0.1-0.2cm.

**Vernacular Names.** Gaharudaunpanjang.

**Distribution.** Moluccas, South Buru, Namrole district, Manrinat village. However, Hou [1], showed that *G. moluccana* was distributed from Kayeli, Buru.

**Habitat & ecology.** At the slopes and valley of Manrinat hill and Tikbary hill.

**Notes.** *G. moluccana*, on young trees, the main characters could be seen on leaves: oblong to linier, nerve up to 62 pairs, slightly curved and ascending, at c.60°.

**Specimen examined.** South Buru: fresh specimen of young branches from young trees, T. Mulyaningsih, 357

*Gyrinops salicifolia* Ridl. *Trans. Linn. Soc. Bot. II*, 9 (1916) 145.

Slender shrub, c. 1 m. Branchlets light brown, pubescent. Leaves sparsely pubescent on the midrib and sometimes on the nerves and veins beneath, lanceolate to linear-lanceolate, 2.65-3.9 cm by 0.45-0.5 cm; base cuneate; apex acute or acute with the tip rounded; nerves 24-26 pairs, nerves and veins similar and equally strong, slightly visible beneath, obscure above; petiole c. 0.25-0.35 cm by 0.05 cm, puberulent beneath.

**Vernacular Names.** Gaharudaunhalus (Tikbary).

**Distribution.** Moluccas, South Buru, Namrole district, Tikbary village.

**Habitat & ecology.** At the slope of the hill of Tikbaryvillage.

**Notes.** *G. salicifolia*, on young trees, the main characters were seen on leaves: narrow linier, up to 4 cm length, nerve slightly curved and ascending, at c.60°.

**Specimen examined.** South Buru: fresh specimen of young branches from young trees, T. Mulyaningsih, 358.

*Gyrinops decipiens*, van Stennis, *Fl. Mal.* 6 (1960) 39-42.

Shrub, 15cm diam, 5m height, bark cream with grey spot. Branches puberulent. Leaves chartaceous, glabrous, rarely sparse pubescent beneath, shining on both surfaces when dry, elliptic-or slightly obovate-oblong, 8.2-14 by 3.45-5.3cm; base narrowly cuneate; apex shortly acuminate; nerves 24-47 pairs, slightly curved or obliquely spreading towards the margin, elevated beneath, visible sometimes obscure above; margin glabrous, entire and undulate. Inflorescences terminal and axillary, umbelliform, 5-23-flowered; 1-2 umbel/ peduncle, peduncle puberulent, very short to 0.2-0.6 cm, thick 0.15-0.2cm, dense, knob-like thickened at the top, 1-2(5) peduncles/

node; pedicels puberulent 0.45-1.55 cm by 0.05-0.1cm. Flowers long-tubular, 0.75-1.35cm by 0.25-0.45cm, calyx tube 0.1-0.2cm diameter. Floral tube almost glabrous inside. Calyx lobes oblong, .2-0.4cm by 0.1-0.15cm. Petaloid appendages, 0.1-0.15cm by 0.05-0.075cm united behind the stamens with hairs as long as themselves. Stamens oblong, 0.75-0.2cm by 0.05-0.075cm, inserted slightly below the appendages; pistil clavate, tomentose, Stigma crested, 0.05-0.1cm by 0.05-0.1cm. Fruits unknown.

**Vernacular Names.** Gaharudaundurian (Bara), Gaharudaunlebar (Tikbary).

**Distribution.** Moluccas, North Buru, Aer Buaya District, Bara village.

**Habitat & ecology.** At the valleys and slopes of Waeduna Mount.

**Notes.** *G. decipiens*: leaves obovate or obovate-oblong, tip acute or emarginated up to 0.4 cm length, margin undulate, nerves < 48, petioles glabrous, nerve slightly curved and ascending. Inflorescences umbel, dense up to 23flowered/ umbel. Flower tubular with knob-like thickened at the top.

**Specimen examined.** North Buru: fresh specimen of young branches from young trees, T. Mulyaningsih, 533 & 534.

*Aquilaria filaria* (Oken) Merr. J. Arn. Arb. 31(1950) 283.

Shrub or tree up to 12 m by 18 cm. Young branchlets light-brown and grey spot, pubescent and glabrescent. Leaves subcoriaceous, glabrous or scattered hairy rarely pubescent beneath, oblong, elliptic-oblong to lanceolate, rarely oblanceolate-oblong, 12.1-16.5 by 4-5 cm; base obtuse to cuneate; apex narrowly acuminate-caudate up to 0.7-1.6 cm; nerves 24-57 pairs, nerves and veins usually homo-geneous, slightly elevated beneath, obscure above; petiole 5-6.5 mm, pubescent.

**Vernacular Names.** Gaharudauncengkeh (Tikbary).

**Distribution.** Moluccas, South Buru, Namrole District, Tikbary village. However, according to Hou & Gunn et al. [1, 8] that *A. filaria* was distributed in Malesia: Philippines (Dinagat I. and Bucas Grande.), Moluccas (Morotai, Ceram, and Ambon), and New Guinea (Sorong, Babo, and Kapor).

**Habitat & ecology.** On the hill in Tikbary village. *A. filaria* plantation was found in Palmito

**Notes.** *A. filaria* could be differentiated among others eaglewood, because it has narrow linear leaves.

**Specimen examined.** North Buru: fresh specimen of young branches from young trees, T. Mulyaningsih, 356.

## CONCLUSIONS

Based on this research can be conclude that there are 4 species of production agarwood, e.g. *Gyrinops moluccana* (Miq.) Baill and 2 species belonging to genus *Gyrinops* are new record to Buru, namely *Gyrinops salicifolia* (Oken) Merr., *G. decipiens* Ding Hou and 1 species *Aquilaria filaria* Ridl. including into new record *Aquilaria* genus to Buru island.

## ACKNOWLEDGMENTS

This Research was partially supported by Centre of Southeast Asian Studies (CSEAS) Kyoto University, and also supported facility on Faculty of Mathematics and Natural Sciences, University of Mataram, Lombok, West Nusa Tenggara. We acknowledge all of the field guide and also colleges who helped with the exploration in Buru Island.

## REFERENCES

1. Hou, *Flora Malesiana* 6(1): 1-42 (1960).
2. *The Plant List*. Version 1.1. Published on the Internet; <http://www.theplantlist.org/tpl1.1/search?q=Gyrinops> (2013), (accessed August 4, 2019).
3. T. Mulyaningsih & I. Yamada. Two New species of *Gyrinops* (Thymelaeaceae) from North Celebes, Indonesia. Paper of SAGE 2017, Bogor, (Augusts 28-31, 2017).
4. T. Mulyaningsih, D. Marsono, Sumardi, & I. Yamada. Selection of Superior Breeding Infrapopulations of *Gyrinops versteegii* (Gilg) Domke. *Journal of Agricultural Science and Technology* **B 4**, 485-492 (2014).

5. K.Keliopas, K. Neville, H. Charlie, F. Sepus, S. Tri, & B. Hendrik. The biodiversity and ecology on the Buru island; Important value of conservation and environmentally manage Proceedings International Seminar "Food Sovereignty and Natural Resources in Archipelago Region" Union of Maluku Students (Permama) and IPB, Bogor (2013).
6. A.Susilo, T. Kalima, & E. Santoso. Panduan lapangan pengenalan jenis pohon penghasil gaharu *Aquilariaspp.* di Indonesia. Pusat Penelitian dan Pengembangan Konservasi dan Rehabilitasi International Tropical Timber Organization (ITTO) – CITES Phase II Project (2014).
7. T.Mulyaningsih, I. Yamada, Notes on some of agarwood in Nusa Tenggara, Celebes and West Papua, in: Natural Resource Management and Socio-Economic Transformation under the Decentralization in Indonesia, Toward Sulawesi Area Studies, Center for Southeast Asian Studies Kyoto University (CSEAS), Kyoto (2008).
8. B. P.Gunn, P. Stevens, M. Singadan, L. Sunari & P. Chatterton. Eaglewood in Papua New Guinea. Proceeding of the first International Agarwood Conference. Tropical Rainforest Project, Vietnam (2003).
9. T. Mulyaningsih & I. Yamada. Tree species of *Aquilaria* (Thymelaeaceae) from Borneo Indonesia. *AIP Conference Proceedings* 2023, Editors by T. Mart *et al.* (American Institute of Physics, Melville, NY, 2018), pp. 1–115.
10. *The Plant List*. Version 1.1. Published on the Internet; <http://www.theplantlist.org/tpl1.1/search?q=Aquilaria> (2013), (accessed August 4, 2019).
11. A. E. Radford, W. C. Dickson, J. M. Massey, and C. R. Bell, *Vascular Plant Systematics* (Harper & Row, New York, 1974).
12. M. G. Simpson, *Plant Systematics* (Academic Press, Amsterdam, 2006).
13. B.D. Grimes. Chapter 6. Mapping Buru: The Politics of Territory and Settlement on an Eastern Indonesian Island. In T. Reuter (ed.). *Sharing the earth, Dividing the Land. Land and territory in the Austronesian world.* (ANU E Press. Canberra, 2006), pp. 135-156.

# B2(1)

## ORIGINALITY REPORT

24%

SIMILARITY INDEX

22%

INTERNET SOURCES

4%

PUBLICATIONS

3%

STUDENT PAPERS

## PRIMARY SOURCES

1	<a href="http://ia601404.us.archive.org">ia601404.us.archive.org</a> Internet Source	8%
2	<a href="http://www.davidpublisher.com">www.davidpublisher.com</a> Internet Source	4%
3	T. Mulyaningsih, I. Yamada. "Three new species of Aquilaria (Thymelaeaceae) from Borneo Indonesia", AIP Publishing, 2018 Publication	4%
4	<a href="http://biodiversitas.mipa.uns.ac.id">biodiversitas.mipa.uns.ac.id</a> Internet Source	3%
5	<a href="http://aip.scitation.org">aip.scitation.org</a> Internet Source	3%
6	<a href="http://wiki2.org">wiki2.org</a> Internet Source	3%

Exclude quotes On

Exclude matches < 3%

Exclude bibliography Off

# B2(1)

---

## GRADEMARK REPORT

---

FINAL GRADE

**/0**

GENERAL COMMENTS

**Instructor**

---

PAGE 1

---

PAGE 2

---

PAGE 3

---

PAGE 4

---

PAGE 5

---

PAGE 6

---

PAGE 7

---

PAGE 8

---

PAGE 9

---

PAGE 10

---

PAGE 11

---

PAGE 12

---

PAGE 13

---

PAGE 14

---

PAGE 15

---

PAGE 16

---

PAGE 17

---

PAGE 18

---

PAGE 19

---

PAGE 20

---

PAGE 21

---

PAGE 22

---

PAGE 23

---

PAGE 24

---

PAGE 25

---

PAGE 26

---