

PAPER • OPEN ACCESS

The effectiveness of UPA system to boost the bioinformatics learning process in limited time for pharmacy students at University of Surabaya, Indonesia

To cite this article: ME Gondokesumo *et al* 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **391** 012036

View the [article online](#) for updates and enhancements.

The effectiveness of UPA system to boost the bioinformatics learning process in limited time for pharmacy students at University of Surabaya, Indonesia

ME Gondokesumo¹, Y Antonius², O Yunita¹

¹Faculty of Pharmacy, University of Surabaya, Indonesia

²Biology Department, Faculty of Biotechnology, University of Surabaya, Indonesia

Email: humas@unit.uabaya.ac.id

Abstract: Bioinformatics is one of essential fields widely applied to various studies, especially in the exploration studies of the herbal medicine in drugs discovery. However, bioinformatics course at the Faculty of Pharmacy University of Surabaya still needs to be improved. This research aims to develop the efficient teaching system to optimize the bioinformatics course within limited time. The developed learning system: Understanding, Practicing, and Applying (UPA) system, was conducted. This study involved 95 pharmacist students which were given questionnaire I (before the class) and questionnaire II (after the class) to measure the success rate of learning process. UPA system was implemented by instructor through the explanation about basic concept, the guidance for practice, and the demonstration in research. Result showed that 72% student was lacked of knowledge about the bioinformatics in the beginning but they have a strong willingness to learn. It proved by high interest in bioinformatics (78%) and herbal exploration (72%), respectively. In the end, the interest rate of student to bioinformatics was 96%. It was in line with the understanding of the tools usage rate in advance research. UPA system was successfully boosting the interest and skill of student in bioinformatics, as well as the awareness of herbal conservation.

Keywords: Conservation, herbal medicine, post-questionnaire, pre-questionnaire, workshop

1. Introduction

Bioinformatics is the combination between biology and information technology¹. It is applied by computational techniques to manage and analyse the biological information^{1,2}. It can be used for sequences alignment, macromolecular structure analysis, molecular dynamics analysis³, molecular modeling^{4,5}, protein structure prediction, gene expression analysis, drug interactions^{6,7}, etc. Pharmacy is one branch of science that related to the application of bioinformatics^{8,9}. The molecular dynamics, molecular docking, drug discovery, and herbal compound exploration are more easily understood by bioinformatics^{4,7}. Therefore, the role of bioinformatics is essential in pharmaceutical science.

Indonesia has high biodiversity of natural resources, including the plant diversity⁹. Various species of plants are known for possessing potential function as herbal medicine. This potential



Content from this work may be used under the terms of the [Creative Commons Attribution 3.0 licence](https://creativecommons.org/licenses/by/3.0/). Any further distribution of this work must maintain attribution to the author(s) and the title of the work, journal citation and DOI.

function is needed to be further explored. In the 1990s, NMR was discovered to identify the herbal compounds. Various databases on phytochemicals have been identified. Bioinformatics has an important role to identify phytochemicals that pharmacological effects^{1,2}.

University of Surabaya is one of the most substantial private university in Indonesia. The development of medicines is being one of essential issues in the Faculty of Pharmacy University of Surabaya. Drug discovery and herbal compound identification are intensively studied. However, the bioinformatics course in the Faculty of Pharmacy University of Surabaya is still considered to be improved. There are various teaching techniques which can be implemented in the class. Each of techniques has benefit in different depth of learning¹⁰. Therefore, the development of teaching system is needed to optimize the bioinformatics lecture due to the limited number of lecture or meetings.

The concept of UPA system consisted of three components, such as understanding, practicing, and applying. All students must fill pre-questionnaire before expose UPA system. After that the instructor explained about the concept of various web server and demonstrated the tutorial in term for Understanding system and then the students practice by themselves under the guidance of instructor for Practice system and then the instructor showed and explained about the related research in bioinformatics for Applying system. All students also must fill post-questionnaire after expose UPA system.

Result showed that the application of Understanding, Practicing, and Applying (UPA) system in bioinformatics class improved the interest and skill of pharmacy student at University of Surabaya. It demonstrated by the success learning rate which significantly elevated after UPA system application. Therefore, it suggested that UPA system was successfully boosting both the interest and skill of student in bioinformatics.

2. Research methods

This research was applying the innovative teaching of bioinformatics course for pharmacy student in the Faculty of Pharmacy, University of Surabaya. It was developed in order to create the optimal course during the limited time. Therefore, the application of UPA system was conducted.

2.1 Participants

Students from faculty of pharmacy at University of Surabaya were addressed as a subject in this research. Students were randomly selected among pharmacist student which never received about bioinformatics. The appropriate sample number for this research was calculated as follow:

$$n = \frac{N}{1+N(d^2)} \quad (1)$$

N = Number of population

n = Number of sample

d = Significance level 0.05

Based on that formula, the minimum number of participants in this research was 77 students. However, in this case, all student was included 95 students as participants. If the number of population was less than 100 people, all the participants could be involved¹¹.

2.2 Procedure

The concept of UPA system consisted of three components, such as understanding, practicing, and applying. All students would be handed with two kinds of questionnaire, including questionnaire I (questionnaire for pre-UPA system) and questionnaire II (questionnaire for post-UPA system).

Students were asked to fill the questionnaire I before the class started to measure the basic knowledge of the student. Furthermore, students were taught by instructor for the introduction of bioinformatics by using UPA system. The instructor explained about the concept of various web

server and demonstrated the tutorial in term for Understanding system. After that, the Practice system was applied by allowing students to practice by themselves under the guidance of instructor. Furthermore, instructor also showed and explained about the related research in bioinformatics as a part of Applying system. Moreover, students were handed with the questionnaire II as the tool to measure the success rate of learning after the application of UPA system. All the obtained data was analyzed by statistical analysis.

2.3 Measurement

Each of questionnaire I and II was contained of five questions in each. Both questionnaires had a similar question, including closed and open question. Closed question allowed students to answer with Yes and No answer, whilst the open questions were encouraged the students to describe the reason of their answer in closed question. Each of student was handed with questionnaire before and after the workshop in order to measure the success rate of learning process. Furthermore, the answer of open questions was also summarized.

Table 1. Questions in questionnaire I and II

Indonesian	English
a) Apakah anda mengerti kata Bioinformatika? (Ya/Tidak)	a) Do you know about Bioinformatics? (Yes/No)
b) Jika Ya , menurut anda apakah bioinformatika itu?	b) If Yes , what is Bioinformatics according to your opinion?
a) Apakah topik Bioinformatika menurut anda menarik? (Ya/Tidak)	a) Whether topic of Bioinformatics is interested? (Yes/No)
b) Jika Ya , mengapa? Jika Tidak , mengapa?	b) If Yes , why is that? If No , why is that?
a) Menurut anda, apakah topik Bioinformatika penting untuk dipelajari? (Ya/Tidak)	a) Whether topic of bioinformatics is important to be learned? (Yes/No)
b) Jika Ya , mengapa? Jika Tidak , mengapa?	b) If Yes , why is that? If No , why is that?
Coba sebutkan beberapa software atau webserver Bioinformatika yang anda ketahui.	Please mention about several software or webserver which you know.
Apakah tumbuhan herbal menarik untuk dipelajari dan dilestarikan? (Ya/Tidak)	Whether medicinal plant is interested to be learned and preserved? (Yes/No)

This research contained of independent and dependent variable. The UPA system was determined as independent variable, whilst the knowledge about bioinformatics, interest level, and awareness of the importance on bioinformatics to be learned were considered as dependent variable.

2.4 Validity test

All collected data were analyzed by validity test to measure the relevancy the measure tool which was in this case is the questions within questionnaire. It was conducted by calculating the r value and compare to the r table. If the r calculation > r table so that it was defined valid. The r table for 95 participants was 0.202 with 5% significance level.

2.5 Reliability test

The reliability test was conducted to identify the consistency of the measurement if it was applied within few times. There were many kinds of techniques which could be used. However, Kuder-Richardson (KR-20) was used in this research. It was designed for question with two possible answer only. The formula was demonstrated as follow:

$$KR - 20 = \left(\frac{n}{n-1} \right) \left(\frac{s^2 - 2pq}{s^2} \right) \quad (2)$$

n = Number of valid questions

s^2 = Variance

p = Number of people in the sample who answer correctly

q = Number of people in the sample who do not answer correctly

3. Result and discussion

3.1 UPA system enhanced the understanding and interest level of pharmacist student to the bioinformatics study

Based on the analysis of validity for closed question (question number 1,2,3, and 5), it showed that all questions within questionnaire I and II are valid. Within questionnaire I, the r calculation for questions 1 until 4 was 0.6242084, 0.74041925, 0.54423133, 0.57000732, respectively. Then, it was compared to the r table for 95 students, that is 0.202. The comparison result showed that r calculation was higher than r table so that all the question was valid. However, within questionnaire II, questions 1 until 4 demonstrated t calculation about 0.98449, 0.98449, 0.98449, 0.90186, respectively. Therefore, all the questions were also valid.

Moreover, the reliability test was carried out for the questionnaire I and II by using Kuder-Richardson (KR-20) formula. Result showed that, questionnaire I and II had score 0.386 and 0.973, respectively. Based on the level of KR-20 score, it demonstrated that questionnaire I had low reliability while questionnaire II had high reliability.

Furthermore, all the data from questionnaire were collected. Regarding to the questionnaire I, it showed that most of students had lack of knowledge about bioinformatics. It demonstrated by 68 of students choose "No" for question number 1 which asked about the basic knowledge of bioinformatics. Whilst, there are 27 students already had the basic knowledge about bioinformatics. Moreover, only 75 students who interested to study bioinformatics in the beginning. However, most of them believe that bioinformatics is essential. It showed by 91 students who answer "Yes" for question number 3.

UPA system was started by demonstrated the basic concept of the bioinformatics related to herbal research. The instructor explained the basic concept by using file presentation with two-ways interaction to students. Furthermore, the instructor also demonstrated about several database and web service. Students were introduced how to obtain data from database then analyze it by using certain web service regarding to the individual purpose. After that, students were introduced to the several journals based on the bioinformatics analysis. It aimed to build the mind mapping of the students regarding to the in silico-based research.

After UPA system were applied, students were allowed to fill the questionnaire II. Interesting result showed that, the basic knowledge, interest level, and awareness of importance of bioinformatics

were highly increased. About 93 students had better understanding about basic knowledge of bioinformatics which demonstrated by ability to answer the verbal question and mention several names of database and web server. Moreover, 93 students found that bioinformatics study was interesting and important for the development of pharmacy study. Furthermore, it also enhanced the awareness of student regarding to plant conservation since students have already understand about the function and benefit in each plant.

3.2 Students have better understanding towards bioinformatics after UPA system application

The questionnaires I were handed to student before the class. In several questions, students were asked to write a feedback. Result showed that students looked confused to provide a definition of bioinformatics since they are not familiar with the bioinformatics. Most students interpreted the bioinformatics as biological information about organism. However, there are some students who once hear about bioinformatics and mentioned about several well-known software or web service. Furthermore, most students were attracted to bioinformatics since this new knowledge can support Pharmacy studies, so that they feel challenged and interested in learning process. On the other hand, there are a small number of students who are less interested in bioinformatics since they assumed that bioinformatics was difficult to understand.

Result of questionnaire II after applying the UPA system showed that all students have better understanding related to bioinformatics. They also have ability to explain the benefits of studying bioinformatics, weaknesses, and strengths of bioinformatics. According to them, bioinformatics is interesting since the computer tools can find out the activity of active compounds contained in herbal plant, interaction between compounds, pathway, and potential mechanism of action. Those functions are closely related to pharmaceutical studies. Moreover, all students were able to mention about the Bioinformatics software and web server which taught by UPA system.

4. Conclusion

Bioinformatics is an advanced technology which essentially needed for pharmacy student in University of Surabaya, especially for herbal medicine exploration. However, the bioinformatics course still needed to be improved. UPA system which stands for Understanding-Practicing-Appling is successfully boosting the basic knowledge and interest level of student about bioinformatics. Moreover, it is also improving the skill of student within bioinformatics application. This application enhances the students about awareness of herbal conservation.

References

- [1] Nicholl DST 2008 *An Introduction to Genetic Engineering Third Edition* (New York: Cambridge University Press)
- [2] Lundblad RL 2007 *Biochemistry and Molecular Biology Compendium* (USA: CRC Press Taylor & Francis Group)
- [3] Allen MP 2014 *Lect. Computational Soft Matter: From Synthetic Polymers to Proteins* **23** 1-28,
- [4] Hooltje HD and Folkers G 1997 *Molelucar Modelling*. Basic Principles and applicatios. Series : Methods and Principles in Medicinal Chemistry Vol V. (New York: VCH Publishers, Inc.)
- [5] Putra GS, Sulistyowaty MI, Ekowati J, and Budiati T 2017 Molecular modelling and in silico analysis of p-methoxycinnamoyl hydrazide analogues as Checkpoint Kinase-1 and aromatase inhibitors *Pharm. Sci. Res.* **4** 66-74

- [6] Sulistyowaty MI Nugroho AE, Putra GS, Ekowati J, and Budiati T 2016 Syntheses, molecular docking study and anticancer activity examination of p-methoxycinnamoyl hydrazides *Int. J. Pharm. Clin. Res.* **8**(6) 623-627
- [7] Suhud F, Tjahjono DH, Yuniarta TA, Putra GS, and Setiawan J 2019. *IOP Conf. Series: Earth. Environ. Sci.* **293**.
- [8] Walsh G 2007 *Pharmaceutical Biotechnology Concepts and Applications* (England: John Wiley & Sons Ltd)
- [9] Halford NG 2006 *Plant Biotechnology Current and Future Applications of Genetically Modified Crops* (England: John Wiley & Sons Ltd)
- [10] Jana H, Erin DS, and Kate LB 2011 Learning by doing: an empirical study of active teaching techniques *J Effect Teach* **11** 40-54
- [11] Sugiyono 2011 *Metode penelitian Pendidikan* (Bandung: Alfabeta)

ABSTRACT BOOK



ICGRC

Santika
Hotel
Malang
September
4 - 5,
2019

THE 10th INTERNATIONAL
CONFERENCE ON GLOBAL
RESOURCE CONSERVATION

*“Biodiversity
Conservation for
Sustainable
Bioeconomy”*

ORGANIZED BY:
Biology Department
Faculty of Mathematics
and Natural Sciences
Universitas Brawijaya

SUPPORTED BY:

KOBI
Konsorsium Biologi

SPONSORED BY:



FOREWORD

Welcome to the 10th International Conference on Global Resource Conservation (ICGRC 2019). The theme this year is Biodiversity Conservation for Sustainable Bioeconomy. The topic aligns bio-based economic activities that have strong innovation potential due to their use of a wide range of sciences, and enabling industrial technologies with biodiversity conservation so that a sustainable activity could be established.

In this event, around 130 authors will share their current experiments, knowledge, and experiences through five subtopics which are botany, zoology, conservation ecology, environmental science, and sustainable materials and resources. They are experts, lecturers, researchers, and students from various universities and research centers from Indonesia and abroad. Through this activity, it is expected to initiate collaborations, create innovation, and meet the demands for development of science and technology.

We would like to deliver a deep appreciation to the dedicated committee members, honorable speakers, and active participants, who have invested significant time to success this event. Additional thanks are given to Universitas Brawijaya and Indonesian Biology Consortium (KOBI) for their supports, and Center of Academic Proofreading Agency (CAPA) for sponsorship.

Finally, we welcome you to Malang, a city known for its cooler temperature, beautiful surrounding countryside, and attractive streets lined with historical buildings. We hope that you will take advantage of the many sights to see in the city, as well as the many natural and man-made wonders nearby, during your stay.

Malang, 04 September 2019

Irfan Mustafa
Chairperson of the 10th ICGRC
Universitas Brawijaya

TABLE OF CONTENTS

FOREWORD	ii
TABLE OF CONTENTS	iii
CONFERENCE SCHEDULE	xiv
FLOOR PLAN	xvi
PARALLEL PRESENTATION SCHEDULE	xvii
KEYNOTE SPEAKERS	1
Divine Sustainable Bio-economy.....	2
Biodiversity conservation towards successful inclusion : An Indian perspective.....	4
Ecosystem Services and Sustainability on Islands, Republic of Korea.....	6
Grasses : An Important Underutilized Natural Resource for Sustainable Bioeconomy.....	9
Exploring Philippine Caves as Potential Sources of Bioactive Compounds.....	11
The concept of Biodiversity on Indonesian Traditional medicine of JAMU.....	12
INVITED SPEAKERS	13
Ethanol Extract of <i>Marsilea crenata</i> Leafs and Its Effects on Sperm Quality and Histology of The Testes of <i>Rattus norvegicus</i>	14
Effects of functional foods on thermotolerance of the nematode <i>Caenorhabditis elegans</i>	15
Diversity of Bioactive Secondary Metabolites Produced by Medicinal Plants Ciplukan (<i>Physalis Angulata L.</i>).....	16
Water Quality Evaluation of Some Beach With Variations of Human Activities and Land Use In Spermonde Islands of Makassar South Sulawesi	17
The Effectiveness Of Banana Tuber And Goat Rumen As Bio-Activator Of Liquid Biopesticide Fertilizers	19
Integration of Traditional Knowledge With Modern Science For Conservation of Medicinal Plants In India	20
Evaluation Of Yeast Diversity In Dadih And Dangke Using pcr-Rflp Of Internal Transcribed Spacer Region	22
SYMPOSIUMS	24
BOTANY (BOT)	25

BOT/O-016	Habitat Characteristic of <i>Taxus Sumatrana</i> (Miquel) De Laub in The Kerinci Seblat National Park.....	40
BOT/O-017	Species Composition in The Habitat of <i>Dipterocarpus Gracilis</i> Ulolanang Nature Reserve	41
BOT/O-018	Lime (<i>Citrus Aurantifolia</i>) Peel Effect on Peroxide Value of Cooking Oil.....	42
BOT/O-019	Leveraging Local Wisdom on Plants to Unlock The Green Economy Potential of Flores	43
BOT/O-020	COMPARISON of Organosulfur Bioactive Compounds in Bulb, Callus and Cells Suspension of Single Garlic (<i>Allium Sativum</i> . L)	44
BOT/O-021	Effect of Growth Regulators on Cell Growth and Flavonoid Production in Cell Culture Of <i>Elaeocarpus Grandiflorus</i>	45
BOT/O-022	Standardization of Some Indonesian Medicinal Plants Used in “Scientific Jamu”.....	46
BOT/O-023	Characterization of Peanut Stripe Virus from West Nusa Tenggara.....	48
BOT/O-024	Potential of Ethnozology in Traditional Treatment of Ethnic Bada in Lore Lindu Biosphere Reserves Central Sulawesi.....	49
BOT/O-025	Molecular Docking Studies of Alkaloid from Sanrego (<i>Lunasia Amara Blanco</i>) as Antidiabetes Through Alpha Amylase Inhibitor.....	50
BOT/O-026	Improvement of Herbal Research With Bioinformatics in Pharmacy Student Faculty of Pharmacy University of Surabaya	51
BOT/O-027	Comparative Study of Leaf Stomata Profiles AMONG Different Genomic Groups of Banana (<i>Musa L.</i>).....	53
BOT/O-028	Diversity and Population Structure Pea (<i>Pisum Sativum L.</i>) Landrace Based on Morphological Data for Indigenous Biodiversity Conservation and Breeding in Indonesia	54
ZOOLOGY (ZLG)		55
ZLG/O-001	Comparison Between Indonesian Local Ettawah Goats Derived from Natural Service and Artificial Insemination Based on Repeated T-Nucleotide	56

	<i>al.</i> Study on the Profile of Capsanthin-Capsurobin Synthase (Ccs) Gene responsible for Carotenoid Synthesis in Chili Pepper (<i>Capsicum frutescens</i> L.) Mutants G1M6 M2 Generation	
15.40 – 15.50	Discussion	

Thursday, 5 September 2019

10.00 – 10.15	INVITED SPEAKER Retno Mastuti. Diversity of bioactive secondary metabolites produced by medicinal plants Ciplukan (<i>Physalis angulata</i> L.)	Moderator: Ryo Okada
10.15 – 10.25	BOT/O-006. Isnaini <i>et al.</i>: Characterization dan Genetic Variability of Rambutan (<i>Nephelium lappaceum</i> L) Based on Morphological Characteristics in Pekanbaru, Riau	
10.25 – 10.35	BOT/O-007. Puji Shandila <i>et al.</i>: Character Selection by Path and Principal Component Analysis for Enhanced Seed Size and Yield in Local Castor Bean (<i>Ricinus communis</i> L.)	
10.35 – 10.45	BOT/O-008. Darmawan Saptadi <i>et al.</i>: Morphological and Citological Response of Bambara Groundnut (<i>Vigna subterranea</i> (L.) Verdcourt) by Colchicine Polyploidization	
10.45 – 10.55	Discussion	
10.55 – 11.05	BOT/O-009. Syarif Husen <i>et al.</i>: Beeswax Formulation and Wrapping Effects on Physical Characteristics of Red Garifta Mango Variety	Moderator: Darmawan Saptadi
11.05 – 11.15	BOT/O-010. Dwi Gusmalawati <i>et al.</i> LC-MS Analysis of Carbohydrate Components in Porang Tubers (<i>Amorphophallus muelleri</i> Blume) from the Second and	

	Third Growth Period	
11.15 – 11.25	BOT/O-013. Ryo Okada <i>et al.</i> Isolation of constituents that inhibit nitric oxide production from the <i>Angelica dahurica</i> root	
11.25 – 11.35	BOT/O-014. Suzuka Makabe <i>et al.</i> The effect of the rhizome of <i>Cyperus rotundus</i> on nitric oxide production in rat hepatocytes	
11.35 – 11.45	Discussion	
11.45 – 12.45	Lunch Break	
12.45 – 12.55	BOT/O-016. Titi Kalima & Adi Susilo. Habitat Characteristic of <i>Taxus sumatrana</i> (Miquel) de Laub In The Kerinci Seblat National Park	Moderator: Kartini Kartini
12.55 – 13.05	BOT/O-017. Denny & Adi Susilo. Species Composition in the Habitat of <i>Dipterocarpus gracilis</i> Ulolanang Nature Reserve	
13.05 – 13.15	BOT/O-018. Sri Rahayu <i>et al.</i> Lime (<i>Citrus aurantifolia</i>) Peel Effect on Peroxide Value of Cooking Oil	
13.15 – 13.25	BOT/O-019. Shinta, S.E. <i>et al.</i> Leveraging Local Wisdom on Plants to Unlock the Green Economy Potential of Flores	
13.25 – 13.35	Discussion	
13.35 – 13.45	BOT/O-020. Frida Kunti Setiowati <i>et al.</i> Comparison of Organosulfur Bioactive Compounds in Bulb, Callus and Cells Suspension of Single Garlic (<i>Allium sativum</i> L)	Moderator: Sri Rahayu
13.45 – 13.55	BOT/O-021. Noor Aini Habibah <i>et al.</i> Effect of Growth Regulators on Cell Growth and Flavonoid Production in Cell Culture of <i>Elaeocarpus grandiflorus</i>	

13.55 – 14.05	BOT/O-022. Kartini Kartini <i>et al.</i> Standardization of Some Indonesian Medicinal Plants Used in “Scientific Jamu”	
14.05 – 14.15	Discussion	

BOTANY

(Room Lontar 1)

13.20 – 13.30	BOT/O-023. Nur Indah Julisaniah <i>et al.</i> Characterization of Peanut Stripe Virus from West Nusa Tenggara	Moderator: Budi Waluyo
13.30 – 13.40	BOT/O-024. Eny Yuniati <i>et al.</i> Potential Of Etnozology In Traditional Treatment Of Ethnic Bada In Lore Lindu Biosphere Reserves Central Sulawesi	
13.40 – 13.50	BOT/O-025. Adriani <i>et al.</i> Molecular Docking Studies Of Alkaloid From Sanrego (<i>Lunasia amara</i> Blanco) As Antidiabetes Through Alpha Amylase Inhibitor	
13.50 – 14.00	BOT/O-026. Marisca Evalina Gondokesumo <i>et al.</i> Improvement of Herbal Research with Bioinformatics in Pharmacy Student Faculty of Pharmacy University of Surabaya	
14.00 – 14.10	Discussion	
14.10 – 14.20	BOT/O-027. Budi Waluyo <i>et al.</i> Diversity and Population Structure Pea (<i>Pisum sativum</i> L.) Landrace Based on Morphological Data for Indigenous Biodiversity Conservation and Breeding in Indonesia	Moderator: Marisca Evalina Gondokesumo
14.20 – 14.30	BOT/O-028. Rizka Aikmelis <i>et al.</i> Biodiversity Conservation with Advanced Variability through Mutation	

Standardization of Some Indonesian Medicinal Plants Used in “Scientific Jamu”

Kartini Kartini¹, Nikmatul Ikhrom Eka Jayani¹, Nina Dewi Octaviyanti¹, Alfian Hendra Krisnawan¹, Christina Avanti²

¹ *Dept. of Pharmaceutical Biology, Faculty of Pharmacy, University of Surabaya, Surabaya*

² *Dept. of Pharmaceutic, Faculty of Pharmacy, University of Surabaya, Surabaya*

*Corresponding email: kartini@staff.ubaya.ac.id

ABSTRACT

Jamu is Indonesian indigenous herbal medicine that has been used empirically to prevent and treat various diseases. To provide evidence on its safety and efficacy, Indonesian government has developed Jamu into Standardized Herbal Medicine and Phytopharmaca. Another strategy is development of Jamu into Scientific Jamu. This herbal medicine has assurance on safety and efficacy through health service-based research. Its raw material is various crude drugs. The problem of this type of raw material is that, depending on the environmental conditions, the quality can vary significantly. This study aimed to standardize crude drug of six medicinal plants included in the composition of Scientific Jamu. They are *Orthosiphonis Folium*, *Sonchi Folium*, *Centella Asiatica Herba*, *Phyllanti Herba*, *Curcuma Domesticae Rhizoma*, and *Curcumae Rhizoma* which were collected from three different origins in Indonesia, i.e.: Batu, Bogor, and Tawangmangu Districts. Standardization was conducted by determination of specific parameters (macroscopic, microscopic, TLC profile) and non specific parameters (loss on drying, total ash, acid-insoluble ash, water and ethanol extractable matter). Results were then compared to Indonesian Herbal Pharmacopoeia to conclude whether the crude drugs have a good quality. Crude drugs from Bogor and Tawangmangu meet the specific and non specific parameters as required. The crude drugs from Batu fulfill all specific parameters, however they fail to comply non specific parameters as required by Indonesian Herbal Pharmacopoeia. All the results represent important information origin of the plant material and the crude drugs should be checked for their specific and non specific parameters before used to ensure their quality. Keywords:

standardization, scientific jamu, specific parameters, non specific parameters, herbal pharmacopoeia

PAPER • OPEN ACCESS

1st Annual Conference on Environmental Science, Society and its Application (ACESSA)

To cite this article: 2019 *IOP Conf. Ser.: Earth Environ. Sci.* **391** 011001

View the [article online](#) for updates and enhancements.

You may also like

- [Advancing a transformative social contract for the environmental sciences: From public engagement to justice](#)
Gwendolyn Blue and Debra Davidson
- [Modelling the interaction of electromagnetic fields \(10 MHz–10 GHz\) with the human body: methods and applications](#)
J W Hand
- [Qualification and frequency accuracy of the space-based primary frequency standard PHARAO](#)
Ph Laurent, F X Esnaut, K Gibble et al.



ECS Membership = Connection

ECS membership connects you to the electrochemical community:

- Facilitate your research and discovery through ECS meetings which convene scientists from around the world;
- Access professional support through your lifetime career;
- Open up mentorship opportunities across the stages of your career;
- Build relationships that nurture partnership, teamwork—and success!

Join ECS!

Visit electrochem.org/join



1st Annual Conference on Environmental Science, Society and its Application (ACESSA)

PREFACE

It's our great pleasure to welcome you to the 1st Annual Conference on Environmental Science, Society and its Application (ACESSA), Purwokerto, Indonesia from 5-7 August 2019.

The Annual Conference on Environmental Science, Society and its Application (ACESSA), provides an excellent international forum for sharing knowledge and result in theory, methodology an applications of Environmental Science, Applied Science, and Technology in theoretical and practical aspects. The aim of the conference is to provide a platform to the researchers and practitioners from both academia as well as industry to meet and share cutting-edge development.

ACESSA-2019 secretariat has received 187 submissions from 4 countries: Malaysia, RRC, USA, and Indonesia. The program held in the City of Purwokerto was organized by the Universitas Jenderal Soedirman (UNSOED) at Java Heritage Hotel, Purwokerto from 5-7 August 2019, and supported by several universities including: Universitas Jambi, Universitas Brawijaya, and Universitas Muhammadiyah Sidoarjo, and also we say thank you for CELL UNSOED and ICGRC Universitas Brawijaya for supporting our conference.

Each paper has been reviewed by the program committee. Only 91 paper has been accepted for oral session (acceptance rate: 48.6 %). The conference program consist of 5 keynote speakers (45 min), 5 parallel session, one poster session and a round table.

We would like to thank scientific committee, and reviewers, as well as the committee of the Universitas Jenderal Soedirman who have participated in the success of this event so that this event can be held as planned. We also conveyed to the Rector of Universitas Jenderal Soedirman who had supported this event both in terms of finance and other supporting facilities.

Editors:

Ely Triasih Rahayu

Bagus Hariyadi

Eko Kurniawan

Robbi Rahim



PAPER • OPEN ACCESS

Editorial Board Members

To cite this article: 2016 *IOP Conf. Ser.: Mater. Sci. Eng.* **120** 011002

View the [article online](#) for updates and enhancements.

Related content

- [Editorial board](#)

- [Editorial Board](#)

- [Editorial board](#)



The banner features a dark blue background with a satellite-style image of Earth. On the left, there are three circular logos: the top one is 'ECS' in a white circle, the middle one is 'The Electrochemical Society' with a stylized 'ECS' logo, and the bottom one is 'THE KOREAN ELECTROCHEMICAL SOCIETY'. The main text in the center reads 'Joint International Meeting PRIME 2020 October 4-9, 2020' in white and blue. Below this, a light blue bar contains the text 'Attendees register at NO COST!' in dark blue. On the right side, there is a large white 'PRIME' logo with a blue arc above it, followed by 'PACIFIC RIM MEETING ON ELECTROCHEMICAL AND SOLID STATE SCIENCE' and '2020' in white. At the bottom right, a dark blue bar contains the text 'REGISTER NOW' in white with a white arrow pointing right.

Editorial Board Members

Subramaniam Ananthakrishnan

Pavel Belov

Charles Cavalcante Casimiro

Sergio Colafrancesco

Mérouane Debbah

Lars Jacob Foged

Debatosh Guha

Sébastien Lalléchère

Jean-Daniel Lan Sun Luk

Dominique Lesselier

André de Lustrac

James McLean

Eric Mokole

Vikass Monebhurrn

Shailendra Oree

Lionel Pichon

Blaise Ravelo

Tapan Sarkar

Russell Taylor

Bernard Veyret



✉ acessa2019@fib.unsoed.ac.id

[HOME \(http://acessa.conference.unsoed.ac.id/home\)](http://acessa.conference.unsoed.ac.id/home)

[CONFERENCE PROGRAM \(http://acessa.conference.unsoed.ac.id/program/conference\)](http://acessa.conference.unsoed.ac.id/program/conference) ▾

Organizing Committee

[Home / Organizing Committee ACCOMODATION \(http://acessa.conference.unsoed.ac.id/accomodation\)](http://acessa.conference.unsoed.ac.id/accomodation)

[JAVANESE CULTURE PROGRAM \(http://acessa.conference.unsoed.ac.id/program/javanese\)](http://acessa.conference.unsoed.ac.id/program/javanese) ABOUT

[CONTACT](#) [PAYMENT \(http://acessa.conference.unsoed.ac.id/payment\)](http://acessa.conference.unsoed.ac.id/payment)

[LOGIN \(http://acessa.conference.unsoed.ac.id/login\)](http://acessa.conference.unsoed.ac.id/login)



Name	Affiliation
Ely Triasih Rahayu	Universitas Jenderal Soedirman
Mustasyfa Thabib Kariadi	Universitas Jenderal Soedirman
Erna Wardani	Universitas Jenderal Soedirman
Bagus Hariyadi	Universitas Jenderal Soedirman
Eko Kurniawan	Universitas Jenderal Soedirman

Program

Conference Program (<http://acessa.conference.unsoed.ac.id/program/conference>)

Javanese Culture Program (<http://acessa.conference.unsoed.ac.id/program/javanese>)

Template



Paper Template
(<http://acessa.conference.unsoed.ac.id/file/te>)
International Conference (ACESSA)

(<http://acessa.conference.unsoed.ac.id/file/template.docx>)

Keynote Speakers

Prof. Hywel Coleman

University of Leeds, UK
Honorary Senior Research Fellow

Prof. Chen Yiping, Ph.D

Jinan University, China
Deputy Director of MOE Key Research Institute

Dr. Mohamed Zain Sulaiman

Universiti Kebangsaan, Malaysia
GEMA Online Journal Editor

Philippe Grangé

Université de La Rochelle, French
Director of Asia-Pasific Institute, University of De La Rochelle

Muhamad Ahsanu, M.Sc, M.Hum

Universitas Jenderal Soedirman, Indonesia
Former Hotel Managers Trainer

Follow Us On Social Media



(<https://www.facebook.com/>)



(<http://twitter.com/>)



(<https://www.instagram.com/>)



(<https://www.youtube.com/>)


MENU

- > HOME (<http://acessa.conference.unsoed.ac.id/home>)
- > ABOUT ACESSA (<http://acessa.conference.unsoed.ac.id/about>)
- > ABOUT UNSOED (<http://acessa.conference.unsoed.ac.id/about/unsoed>)

- > CONFERENCE PROGRAM (<http://acessa.conference.unsoed.ac.id/program/conference>)
- > JAVANESE CULTURE PROGRAM (<http://acessa.conference.unsoed.ac.id/program/javanese>)
- > CONTACT (<http://acessa.conference.unsoed.ac.id/contact>)



(<https://info.flagcounter.com/v5Tl>)

This site uses cookies. By continuing to use this site you agree to our use of cookies. To find out more, see our Privacy and Cookies policy. 

 **NOTICE:** Ensuring subscriber access to content on IOPscience throughout the coronavirus outbreak - see our remote access guidelines.

Table of contents

Volume 391

2019

◀ Previous issue Next issue ▶

Annual Conference on Environmental Science, Society and its Application 5–7 August 2019, Purwokerto, Indonesia

Accepted papers received: 30 October 2019

Published online: 20 December 2019

Open all abstracts

Preface

OPEN ACCESS 011001

1st Annual Conference on Environmental Science, Society and its Application (ACCESSA)

+ Open abstract  View article  PDF

OPEN ACCESS 011002

Peer review statement

+ Open abstract  View article  PDF

Papers

Agricultural

OPEN ACCESS 012001

Comparative Analysis Trade Balance of the Indonesian Agricultural Products and the Strengthening of National Food: Case Study in IMT-GT Indonesia-Malaysia-Thailand Economic Triangle Cooperation and Integration)

P Adi and S Wella

+ Open abstract  View article  PDF

Agro Technology

OPEN ACCESS 012002

RAPD-PCR primer selection to analyze genetic diversity of Cinnamon plan

Lizawati, S Nusifera, Neliyati, Y Alia and Antony

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012003

Application of Structural Equation Modeling to Control Anthracnose Disease Attacking Red Chili in Several the East Java Production Center

Djuhari, C. Retnaningdyah, B. Yanuwiadi and E. Arisoesilaningsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012004Effect of Rhizobium Inoculum and Liquid Organic Fertilizer on Growth and Yield of Peanut (*Arachis Hypogaea* L.) CV. Takar-2

Alfandi, S Wahyuni and W W Nisa

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012005The effect of nitrogen sources on anti-phytopathogenic activities fermented filtrate of *Bacillus subtilis* AAF2

Syukria Ikhsan Zam, Oksana, A Agustien, Syamsuardi, A Djamaan and I Mustafa

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012006

Biodiversity of Endophytic Fungi from Lowland Tomato Plants and Their Potential as Biological Control Agents for Anthracnose Disease in Chili Plants at Green House

Arika Purnawati, T Mujoko, N Rahmadhini and E Syafriani

[+ Open abstract](#) [View article](#) [PDF](#)

Animal Science

OPEN ACCESS 012007

Reproduction Index of Kacang Goat Dam Reared under Closed Population in Buduran Sub-District, Sidoarjo Regency, East Java, Indonesia

Suyadi Suyadi, W Andre Septian, A Furqon, TE Susilorini and Moch. Nasich

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012008

The recovery rate of Simental spermatozoa frozen of post thawing by using tris dilution with different egg yolks

Yendraliza, Y Hendriyanto, D A Mucra, Zumarni and M Rodiallah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012009

Goat oocytes quality after vitrification using difference of glycerol concentration and exposure time

S Wahjuningsih, G Ciptadi, M N Ihsan, A R I Putri and H N Karima

[+ Open abstract](#) [View article](#) [PDF](#)

Biodiversity

OPEN ACCESS

012010

Parameters optimization of bio composite manufacturing using experimental design

Debrina Puspita Andriani, D H Sulistyorini, O Novareza, F P Purwandani and T Yuniarto

[+ Open abstract](#) [View article](#) [PDF](#)

Biology, Chemistry and Medicine

OPEN ACCESS

012011

The Use of Prebiotics and Probiotics in Fish Meal Processing

E Hendalia, F Manin, Adriani, E P Dianti and A N Azizah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012012

The Application of Concentration and Stimulation Techniques of Polyethylene Glycol on the Production of Rubber Plant PB 260 Clone

G A Yunta and M Dede

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012013

The Antibacterial Activities of Durian Rinds Extract (*Durio Zibethinus*) Against *Propionibacterium acne*

F Fitriainingsih, A Soyata and S Wigati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012014

Biomaterial Biochar for Soil Carbon Sequestration Strategy and Its Future Prospects

Damris Muhammad

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012015

Response of Soybean (*Glycine Max*) to The Reduction of Inorganic Fertilizer with Palm Oil Factory Waste Decanter Cake

M D Duaja, E Kartika and B Buhaira

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012016

The Effect Oil Palm Fronds Fermented With *Prolinas* to Milk Production of Dairy Cattle

M Mardalena, S Syarif and Z Zubaidah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012017

Boer Spermatozoa Quality in Different Incubation Periods and Medium for In Vitro Fertilization (IVF) Preparation

Ardyah Ramadhina Irsanti Putri, G Ciptadi, S Wahyuningsih and W G Wibowo

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012018

Evaluation of ecosystem quality, comfort, and services of eco-friendly residences in Lowokwaru District, Malang

Dian Rizkiaditama, D Siswanto and E Arisoesilaningsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012019

Study on the Profile of Capsanthin-Capsurobin Synthase (Ccs) Gene responsible for Carotenoid Synthesis in Chili Pepper (*Capsicum frutescens* L.) Mutants G1M6 M2 Generation

Estri Laras Arumingtyas, A Z Fuadati and E F Dwinianti

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012020

The effectiveness of banana tuber and goat rumen as bio activator of liquid biopesticide fertilizers

Amin Setyo Leksono, Irfan Mustafa, Aminudin Afandhi, Anisa Zairina and Yuris Setyadin

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012021

The physicochemical properties comparison of the natural coconut water and the packaging coconut water

Christyanita P Ekasari and Sri Widyarti

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012022

LC-MS analysis of carbohydrate components in Porang tubers (*Amorphophallus*

muelleri Blume) from the second and the third growth period

D Gusmalawati, E L Arumingtyas, R Azrianingsih and R Mastuti

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012023

Metagenomic analysis of diversity and composition of soil bacteria under intercropping system *Hevea brasiliensis* and *Canna indica*

Y Effendi, A. Pambudi, Y. Sasaerila and R. S. WijiHastuti

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012024

Biology and population dynamics analysis of fringescale sardine (*Sardinella fimbriata*) in Bali Strait waters, Indonesia

Gatut Bintoro, Daduk Setyohadi, Tri Djoko Lelono and Fitri Maharani

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012025

Evaluation of Yeast Diversity in Dadih and Dangke Using PCR-RFLP of Internal Transcribed Spacer Region

Y D Jatmiko, G S Howarth and M D Barton

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012026

Combination of *Moringa oleifera* Extract and Fish Albumin can Reduce Inflammatory Cytokine TNF α and IFN γ and Lipid Retention in Steatohepatitis Mice Model

Wirdatun Nafisah, M A L Chaubah, N Z L, A Soewondo and M Rifa'i

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012027

Screening of Keratinolytic Fungi for Biodegradation Agent of Keratin from Chicken Feather Waste

Sutoyo, Subandi, Tri Ardyati and Suharjono

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012028

Understanding the Characteristic of Roosting Sites of Green Peafowl (*Pavo muticus* Linnaeus, 1766) in Baluran National Park

Suhadi, Agus Dharmawan, Etis Prasila Utami and Riri Retnaningtyas

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012029

The Community Structure of Microalgae and Exploring its Potentially to Biofuel Producing in Ranu Grati, East Java Indonesia

Sitoesmi Prabaningtyas, T Ardyati, Suharjono and C Retnaningdyah

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012030

Density of microbe as biofertilizer candidate on fibric peat in oil palm plantation area at Kubu Raya District, West Kalimantan

Siti Khotimah, Suharjono, T Ardyati and Y Nurani

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012031

Apoptotic and necrotic lymphocytes after treatment of stem bark extract of *Plumeria rubra* L invitro

N Kuswanti, S Widyarti, W Widodo and M Rifa'i

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012032

Potential compound of *Curcuma xanthorrhiza* and *Curcuma zedoaria* as Mortalin inhibitor to control cancer cell growth through computational study

N Fitriana, F A Khairunnisa, M Rifa'i and Widodo

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012033

Characterization of Rhizosphere Bacteria and Their Potency as Phytoremediation Promoting Agents for Cr (VI) Contaminated Soil

Nita Shilfiani Rohmah, Suharjono and I Mustafa

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012034

The Effect of Explant Types and Plant Growth Regulators On Callus Induction of Geranium (*Pelargonium graveolens* L'Her) In Vitro

Moch Faizul Huda, S Indriyani and W Widoretno

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS

012035

The effect of *Moringa oleifera* Lam leaf extract fermented by *Lactobacillus plantarum* on the expression of B220⁺ and CD11b⁺ cells in mice infected with *Salmonella typhi*

MM Riyaniarti Estri Wuryandari, Widodo, E Widjajanto and M Rifa'i

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012036

The effectiveness of UPA system to boost the bioinformatics learning process in limited time for pharmacy students at University of Surabaya, Indonesia

ME Gondokesumo, Y Antonius and O Yunita

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012037

Comparative study of leaf stomata profiles among different ploidy levels and genomic groups of bananas (*Musa L.*)

I Auliya, L Hapsari and R Azrianingsih

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012038

Interspecific variation in herbivory level and leaf nutrients of mangroves *Rhizophora*

Indah Trisnawati, M Muryono and I Desmawati

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012040

Utilization of Coconut Milk and Cane Sugar to Grow Indigenous Entomopathogenic *Bacillus thuringiensis* for Controlling *Aedes aegypti* Larvae

Bambang Fajar Suryadi, K E Safira, E Hidayati, Fathurrahman and Sarkono

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012041

The Potential of Ethnozoology in Traditional Treatment of Bada Ethnic in Lore Lindu Biosphere Reserve in Central Sulawesi

E Yuniati, S Indriyani, J Batoro and Y Purwanto

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012042

Standardization of Some Indonesian Medicinal Plants Used in "Scientific Jamu"

K Kartini, N I E Jayani, N D Octaviyanti, A H Krisnawan and C Avanti

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012043

Characterization of Peanut Stripe Virus from West Nusa Tenggara

N I Julisaniah, Suharjono, R Mastuti and E L Arumingtyas

[+](#) Open abstract [View article](#) [PDF](#)

OPEN ACCESS 012044

Ethnobotany of Jonggol Plants (*Erechtites valerianifolia* Wolf.) on Communities in

Traditional Markets in Malang City and Detection of Its Chemical Compounds

P P Fatmawati and J Batoro

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012045

Lime (*Citrus aurantifolia*) Peel Effect on Peroxide Value of Cooking Oil

S Rahayu, Supriyatin and T R Fauziah

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012046

Holothuroidea as a Constituent of Benthic Communities in the Seagrass Ecosystems at Bira Island Islands

R Komala, M Miarsyah and R D Wulaningsih

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012047

Leveraging Ethnobotany to Unlock The Green Economy Potential of Flores Through Local Textile Industry

S A Ramadhanti, H Rustiami, L M R Kaho, Rosaria and E Sukara

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012048

Extract Bee Propolis (*Trigona* sp) for Preventive Increase Protease Activity and Defect of Trachea Histology in Rats (*Rattus norvegicus*) Exposed to Cigarette Smoke

E N Indasari, A P W Marhendha and A W Wardhana

[+ Open abstract](#) [View article](#) [PDF](#)

Disaster Management

OPEN ACCESS

012049

Pesantren-based disaster mitigation strategy : case study pondok pesantren Darunnajah Cipining Bogor

Rihlah Nur Aulia, A I Setianingsih, Kurniawati and S Narulita

[+ Open abstract](#) [View article](#) [PDF](#)

Earth Science

OPEN ACCESS

012050

Comparing contributors and PM₁₀ dispersion around Tugu Juang and in governor office area of Jambi City, Indonesia

R A Handika, R A Lestari and R Saputra

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012051

Characteristic of Geothermal System at Semurup Manifestation, Kerinci: Geological and Geochemistry Investigation-Based

W Jarot, W U Hari, I L Muhammad, S Yuliamorsa, S Anggideliana, Juventa and M Yosa

[+ Open abstract](#) [View article](#) [PDF](#)

Ecology

OPEN ACCESS 012052

Native and non-native frogs responded differently to modernization at Japanese paddy fields

Qothrun Izza, G Fujita and T Miyashita

[+ Open abstract](#) [View article](#) [PDF](#)

Environmental

OPEN ACCESS 012053

Growth and development of *young male* inflorescences of oil palm (*Elaeis guineensis* Jacq.) In tissue *culture* system: The effect of 2, 4-Dichlorophenoxyacetic Acid

Z Zulkarnain, E Kartika and L Lizawati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012054

Processing Of Palm Oil Waste Based On Alternative Energy Sources Through Bricket Technology For Farmers In Palm Oil Production Center (Efforts to Reduce the Potential of Environmental Pollution from Waste Abundance Towards Environmental Sustainable)

E Anggereini, U Yelianti and H Sofyan

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012055

The effect of Aerobic and Anaerobic composting methods against water content and the amount of Pathogenic Microorganisms from Sludge treatment plant and organic waste

Winnie Laura C Hutagalung and Rinaldi

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012056

Development strategy for the Sustainability of Liberica Coffee In Jambi Province, Sumatera, Indonesia

Rosyani, D Napitupulu and E Kartika

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012057

Exploring the Potential of Green Coffee Extract for Wound Healing Treatment

Humaryanto and O R Ave

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012058

Diversity of Arbuscular Mycorrhizal Fungi from Liberica Tungkal Jambi Coffee Plant Rhizosphere on Peatland

Elis Kartika, Made Deviani Duaja and Gusniwati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012059

Hydrogen Sulfide Exposure Coverage for Residents' Health Risk at Sukawinata Landfill

A F Faisya, Y Ardillah and D A Putri

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012060

Strengthening Group: Entrepreneurship Reorientation Toward Development of Liberica Coffee

M D Duaja, J Simatupang and E Kartika

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012061

Effect of Growth Regulators on Cell Growth and Flavonoid Production in Cell Culture of *Elaeocarpus grandiflorus*

Noor Aini Habibah, WH Nugrahaningsih, Y. Ulung Anggraito, Khoirul Mukhtar, Nur Wijayanti, Fajar Mustafa and Yosa Rostriana

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012062

Character selection by path and principal analysis for enhanced seed size and yield in local castor bean (*Ricinus communis* L.)

Budi Waluyo, Puji Shandila, Chindy Ulina Zanetta, Darmawan Saptadi, Noer Rahmi Ardiarini and Kuswanto

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012063

Information Disclosure from textile companies for the prevention of Pollutant Release

Ahmad Ashov Birry, Suyud Warno Utomo and Herdis Herdiansyah

[+ Open abstract](#) [View article](#) [PDF](#)

Food Science

OPEN ACCESS 012064

Morphology and fruit quality characters of Pineapple (*Ananas comosus* L. Merr) cv. Queen on three sites planting: freshwater peat, brackish peat and alluvial soil

Rosmaina, MA Almaktsur, R Elfianis, Oksana and Zulfahmi

+ Open abstract  View article  PDF

OPEN ACCESS 012065

PERSONAL RELATIONSHIP HYGIENE WITH THE RINGWORM EVENTS IN PUJON DISTRICT MALANG REGENCY

Awang Teja Satria and Almaedawati Erina

+ Open abstract  View article  PDF

Forest Science

OPEN ACCESS 012066

The Impact of Forest Sector Investments on Leading Economics and in Co2 Emissions Changes in Jambi Province

Heriberta, Zulgani and VYN Yohannes

+ Open abstract  View article  PDF

Nature Science

OPEN ACCESS 012067

Species Composition in the Habitat of *Dipterocarpus gracilis* Ulolanang Kecubung Nature Reserve

Denny and A Susilo

+ Open abstract  View article  PDF

OPEN ACCESS 012068

Habitat Characteristic of *Taxus sumatrana* (Miquel) de Laub in The Kerinci Seblat National Park

Titi Kalima and Adi Susilo

+ Open abstract  View article  PDF

Oceanography

OPEN ACCESS 012069

The Sustainable Ecotourism Potential Development With Special Reference to Oliveridley Sea Turtle (*Lepidochelys olivacea*) Along Bantul Beaches, Indonesia

Agung Budiantoro, C Retnaningdyah, L Hakim and A S Leksono

+ Open abstract  View article  PDF

Physics

OPEN ACCESS 012070

Effects of Heating on the dielectric properties of egg yolk and egg white of chicken (Gallus Domesticus)

Chomsin Sulistya Widodo, A Hidayat and T Ukhro

[+ Open abstract](#) [View article](#) [PDF](#)

Soil Science

OPEN ACCESS 012071

Effect of Soil Physicochemical Properties on PGPR Density at A Coffee Plantation in Malang, Indonesia

Ervinda Yuliatin, Tri Ardyati and Suharjono Suharjono

[+ Open abstract](#) [View article](#) [PDF](#)

Water and Air Science

OPEN ACCESS 012072

The Hydraulic Modelling of Capacity of Water Pool in Universitas Jambi

R C Wijaya and R Rohati

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012073

Diversity and Distribution of Sea Slugs (Gastropods: Heterobranchia) in Sempu Strait, Indonesia

Anthon Andrimida and R Hermawan

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012074

Species composition of spiny lobsters caught at the South Sea of Pacitan of East Java, Indonesia

Arief Setyanto, W Setyowati, Soemarno, D G R Wiadnya and C Prayogo

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012075

Water Quality Evaluation of Some Beach With Variations of Human Activities and Land Use in Spermonde Archipelago of Makassar South Sulawesi

Catur Retnaningdyah, Luchman Hakim, Rispah Hamzah and Arina Mana Sikana

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS 012076

Survival Rate and Quality of Phronima Suppa (*Phronima* sp) Zoea with the Cryptobiosis Application

Muhammad Hattah Fattah, Siti Rahbiah Busaeri and Alan Munandar

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012077

Diversity and Conservation Status of Fish in The Water of Rolak Songo Dam,
Mojokerto District East Java Indonesia

Nuril Ahmad, B Yanuwiadi, C Retnaningdyah and L Hakim

[+ Open abstract](#) [View article](#) [PDF](#)

OPEN ACCESS

012078

Developing A Low Cost Particulate Matter Measurement System

A Y P Wardoyo, H A Dharmawan, M Nurhuda and E T P Adi

[+ Open abstract](#) [View article](#) [PDF](#)

JOURNAL LINKS

[Journal home](#)

[Information for organizers](#)

[Information for authors](#)

[Search for published proceedings](#)

[Contact us](#)

[Reprint services from Curran Associates](#)



Source details

IOP Conference Series: Earth and Environmental Science

Scopus coverage years: from 2010 to Present

ISSN: 1755-1307 E-ISSN: 1755-1315

Subject area: Environmental Science: General Environmental Science

Earth and Planetary Sciences: General Earth and Planetary Sciences

CiteScore 2019

0.4



SJR 2019

0.175



SNIP 2019

0.514



[View all documents >](#)

[Set document alert](#)

[Save to source list](#) [Journal Homepage](#)

[CiteScore](#) [CiteScore rank & trend](#) [Scopus content coverage](#)

Improved CiteScore methodology

CiteScore 2019 counts the citations received in 2016-2019 to articles, reviews, conference papers, book chapters and data papers published in 2016-2019, and divides this by the number of publications published in 2016-2019. [Learn more >](#)

CiteScore 2019

$$0.4 = \frac{11,544 \text{ Citations 2016 - 2019}}{32,872 \text{ Documents 2016 - 2019}}$$

Calculated on 06 May, 2020

CiteScoreTracker 2020

$$0.4 = \frac{17,363 \text{ Citations to date}}{42,393 \text{ Documents to date}}$$

Last updated on 07 September, 2020 • Updated monthly

CiteScore rank 2019

Category	Rank	Percentile
Environmental Science	#176/210	16th
General Environmental Science		
Earth and Planetary Sciences	#164/187	12th
General Earth and Planetary Sciences		

[View CiteScore methodology >](#) [CiteScore FAQ >](#) [Add CiteScore to your site](#)

About Scopus

- [What is Scopus](#)
- [Content coverage](#)
- [Scopus blog](#)
- [Scopus API](#)
- [Privacy matters](#)

Language

- [日本語に切り替える](#)
- [切换到简体中文](#)
- [切换到繁體中文](#)
- [Русский язык](#)

Customer Service

- [Help](#)
- [Contact us](#)



Test Potensi Akademik Online

Tingkatkan kemungkinan anda diterima bekerja dgn melampirkan hasil Test Potensi Akademik

tokopedia.com

BUKA

IOP Conference Series: Earth and Environmental Science

Country [United Kingdom](#) - [SIR Ranking of United Kingdom](#)

Subject Area and Category [Earth and Planetary Sciences](#)
[Earth and Planetary Sciences \(miscellaneous\)](#)

[Environmental Science](#)
[Environmental Science \(miscellaneous\)](#)

Publisher [IOP Publishing Ltd.](#)

Publication type Conferences and Proceedings

ISSN 17551315, 17551307

Coverage 2010-2020

Scope The open access IOP Conference Series: Earth and Environmental Science (EES) provides a fast, versatile and cost-effective proceedings publication service.

[Homepage](#)

[How to publish in this journal](#)

[Contact](#)

[Join the conversation about this journal](#)

18

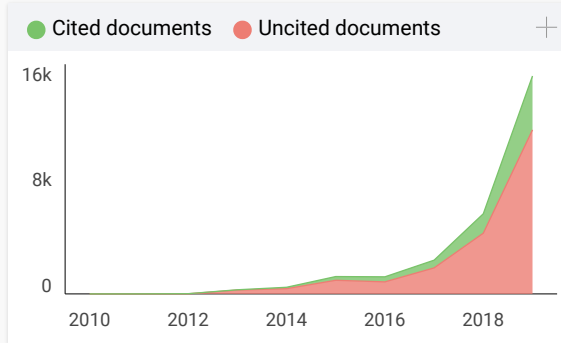
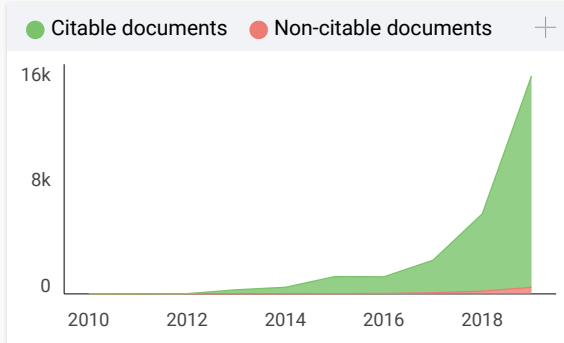
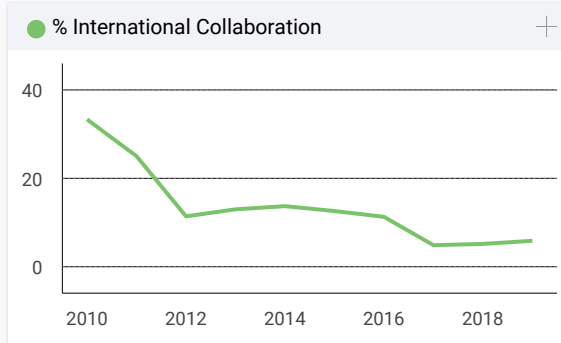
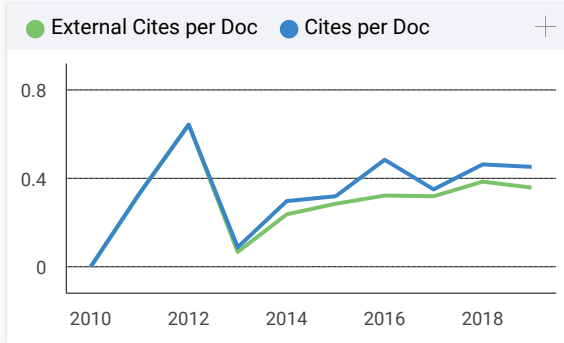
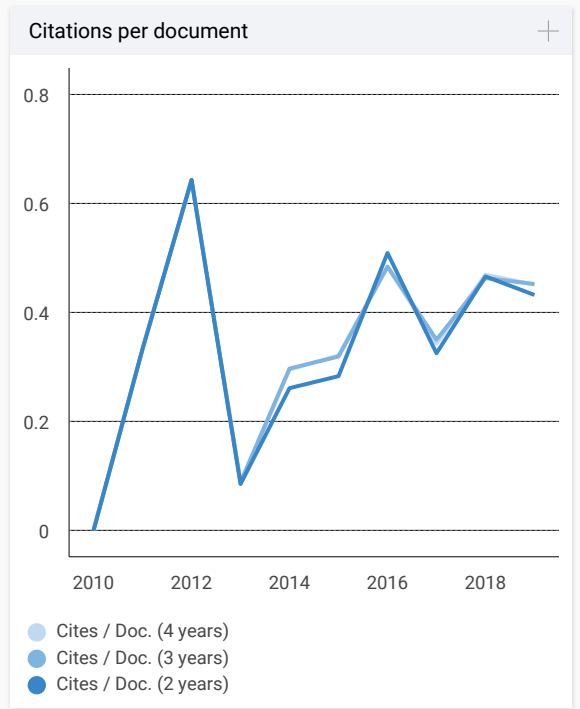
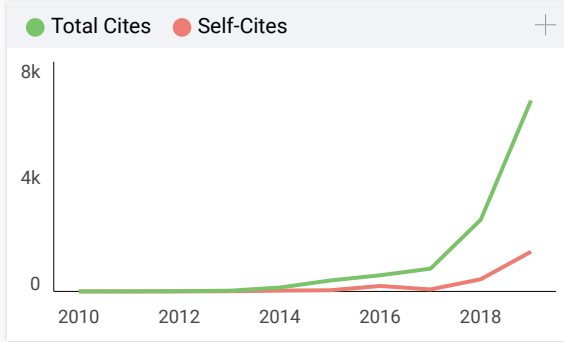
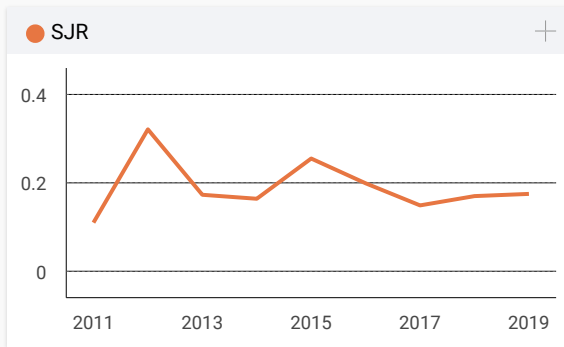
H Index

Test Potensi Akademik Online

Tingkatkan kemungkinan anda diterima bekerja dgn melampirkan hasil Test Potensi Akademik

tokopedia.com

BUKA



IOP Conference Series: Earth and Environmental...

← Show this widget in your own website

Not yet assigned quartile

Just copy the code below and paste within your html code:

SJR 2019 **0.18**

powered by scimagojr.com

```
<a href="https://www.scimagojr.com/journalsearch.php?q=19900195068&tip=sid&clean=0"
```