

LEMBAR PENILAIAN KARYA ILMIAH

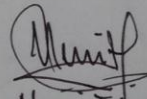
Nama Penulis dan Peneliti : Aflizar, SP.,MP.,Ph.D
 Judul Jurnal : " Geochemical investigation of selected element in an agricultural soil: Case study in Sumani Watershed, West Sumatera in Indonesia "

Status Jurnal : J.Trop.Soils, Vol 21, No.1, 2016:49-66. ISSN 0852-257 X
<http://journal.unila.ac.id/index.php/tropicalsoil>. https://www.researchgate.net/profile/Aflizar_Aflizar : DOI: 10.5400/jts.2016.21.1.49

No	UNSUR YANG DINILAI	BOBOT	SKOR	NILAI
1.	Kesesuaian judul makalah karya ilmiah dengan bidang yang di ampu oleh penulis	30%	30	9
2.	Pemenuhan kaidah penulisan karya ilmiah	30%	30	9
3.	Kebaharuan aspek/masalah yang diteliti	20%	30	6
4.	Struktur penulisan karya ilmiah (Judul, Permasalahan, Metode penelitian/Pemecahan, hasil dan pembahasan, Kesimpulan, daftar pustaka	10%	30	3
5.	Struktur Kalimat dan Bahasa	10%	40	4
	TOTAL	100%		31

Bangsopati, 2 Maret 2016

Penilai I



Dr. Neni Trijunedona

NIP: 197209162000032001

Catatan:

Skor : 1-40, Untuk Jurnal Internasional

Skor: 140, Untuk Jurnal Nasional Terakreditasi

Skor: 1-10, Untuk Jurnal Nasional tidak Terakreditasi

LEMBAR PENILAIAN KARYA ILMIAH

Nama Penulis dan Peneliti : Aflizar, SP.,MP.,Ph.D

Judul Jurnal : " Geochemical investigation of selected element in an agricultural soil: Case study in Sumani Watershed, West Sumatera in Indonesia "

Status Jurnal : J.Trop.Soils, Vol 21, No.1, 2016:49-66. ISSN 0852-257 X
<http://journal.unila.ac.id/index.php/tropicalsoil>. https://www.researchgate.net/profile/Aflizar_Aflizar : DOI: 10.5400/jts.2016.21.1.49

No	UNSUR YANG DINILAI	BOBOT	SKOR	NILAI
1.	Kesesuaian judul makalah karya ilmiah dengan bidang yang di ampu oleh penulis	30%	40	12
2.	Pemenuhan kaidah penulisan karya ilmiah	30%	30	9
3.	Kebaharuan aspek/masalah yang diteliti	20%	40	8
4.	Struktur penulisan karya ilmiah (Judul, Permasalahan, Metode penelitian/Pemecahan, hasil dan pembahasan, Kesimpulan, daftar pustaka	10%	40	4
5.	Struktur Kalimat dan Bahasa	10%	40	4
	TOTAL	100%		

Tanjung Pati, 4 November 2019

Penilai II

(Handwritten signature)

.....Rr. Edis Syatri.....

NIP:.....49791012002121003

Catatan:

Skor : 1-40, Untuk Jurnal Internasional

Skor: 140, Untuk Jurnal Nasional Terakreditasi

Skor: 1-10, Untuk Jurnal Nasional tidak Terakreditasi

Available online at:
<http://journal.unila.ac.id/index.php/tropicalsoil>
 DOI: 10.5400/jts.2016.21.1.49

Geochemical Investigation of Selected Elements in an Agricultural Soil: Case Study in Sumani Watershed West Sumatera in Indonesia

Aflizar¹, Muzakkir¹, Roni Afrizal¹, Muhammad Azadur Rahman²

¹State Polytechnic Payakumbuh for Agriculture (Politeknik Pertanian Negeri Payakumbuh), Indonesia 26271,
 e-mail: aflizar_melafu@yahoo.com.

²Department of Geoscience, Graduate School of Science and Engineering, Shimane University, 1060
 Nishikawatsu-Cho, Matsue 690-8504, Japan, e-mail: muhammad_azadur@yahoo.com

Received 17 September/ accepted 20 December 2015

ABSTRACT

This paper presents the geochemical study of agricultural soil and river sediments along Sumani watershed, West Sumatra in Indonesia. We examined the distribution and abundances of 16 elements (Pb, Zn, Cu, Ni, Cr, V, Sr, Rb, Ce, Th, Zr, Si, Ti, Fe, Ca, and P) in vegetable soil, sawah soil and river sediment sample, to evaluate the factors controlling their abundances, possible sources, and environmental implications. Average concentrations of Pb, Zn, Cu, Ni, Cr, V, Sr, Rb, Ce, Th, Zr at vegetable (1) soil were 38, 88.3, 38.7, 3, 8, 101, 96, 98, 87, 31 and 218 mg kg⁻¹, 26, 39.05, 8.8, 13.5, 31, 231.5, 37, 19, 78, 16 and 303.5 mg kg⁻¹ at sawah soil (3, 4) and 30, 61.6, 35.7, 9, 22, 294, 65, 12, 78, 14 and 232 mg kg⁻¹ at river sediment (2), respectively. The concentration of Pb, Rb, Th and Zr at upland vegetables, V and Zr at sawah soil and river sediment were mostly two time Sumatra BCSCST or BCC in several samples. Enrichment factor values showed low to moderate enrichment of Pb, Zn, Cu, Rb, Ce and Zr, whereas Th showed significant contamination at vegetables soil, suggesting contributions from anthropogenic sources. Anthropogenic contributions of most metals mainly originate from natural processes. However, Pb, Ce, Th and Zr ranges of 527–108, 41–89, 66–117 and 35–100%, respectively, at Vegetable and sawah soil and river sediment confirm their anthropogenic contribution. Factor analysis and correlation matrices suggested that elevated metal concentrations at agricultural soil in Sumani watershed might be controlled by pH, CEC, Fe-oxy-hydroxides. Deposition of metals at vegetable and sawah soil and river sediment might be controlled by non-ferrous metal (*i.e.*, aluminosilicates), sediment grain size, or source rock composition (andesite, alluvial fan, undifferentiated volcanic material, granite and gneiss).

Keyword: Agricultural soil, anthropogenic activities, enrichment factor, metals source, river sediment, watershed trace

ABSTRAK

Penelitian ini menyampaikan studi geokimia tanah pertanian dan sedimen sungai di sekeliling DAS Sumani, Sumatra Barat-Indonesia. Penelitian ini menganalisis distribusi dan kelimpahan dari 16 unsur (Pb, Zn, Cu, Ni, Cr, V, Sr, Rb, Ce, Th, Zr, Si, Ti, Fe, Ca, dan P) di sampel tanah sayuran, tanah sawah dan sedimen sungai untuk mengevaluasi faktor yang mengendalikan kelimpahan atau paparan unsur, sumber, dan implikasi terhadap lingkungan. Konsentrasi rata-rata Pb, Zn, Cu, Ni, Cr, V, Sr, Rb, Ce, Th, Zr di sampel tanah sayuran (1) masing-masingnya yaitu 38, 88,3, 38,7, 3, 8, 101, 96, 98, 87, 31 dan di tanah sawah yaitu 218 mg kg⁻¹, 26, 39,05, 8,8, 13,5, 31, 231,5, 37, 19, 78, 16 dan 303,5 mg kg⁻¹ (3, 4) dan pada sedimen sungai (2) yaitu 30, 61,6, 35,7, 9, 22, 294, 65, 12, 78, 14 dan 232 mg kg⁻¹. Konsentrasi Pb, Rb, Th dan Zr pada tanah sayuran di dataran tinggi, V dan Zr di tanah sawah dan pada sedimen sungai sebagian besar dua kali konsentrasi pada Sumatera BCSCST atau BCC di beberapa sampel. Nilai faktor pengayaan unsur menunjukkan pada kisaran rendah sampai moderat untuk unsur Pb, Zn, Cu, Rb, Ce dan Zr, sedangkan Th menunjukkan kontaminasi yang signifikan di tanah sayuran, berarti menunjukkan kontribusi dari sumber antropogenik. Kontribusi antropogenik dari logam terutama berasal dari proses alam. Namun, Pb, Ce, Th dan Zr dengan kisaran masing-masing yaitu 527–108, 41–89, 66–117 dan 35–100%, di tanah sayuran dan tanah sawah dan sedimen sungai mengkonfirmasi adanya kontribusi antropogenik. Analisis faktor dan korelasi matrik menunjukkan bahwa konsentrasi logam yang tinggi pada tanah pertanian di DAS Sumani dapat dikendalikan oleh pH, KTK, Feroxy-hidroksida. Penumpukan logam pada tanah sayuran dan tanah sawah dan sedimen sungai mungkin dikendalikan oleh logam non-ferrous (yaitu, aluminosilikat), ukuran butiran sedimen, atau komposisi batuan induk (andesit, kipas alluvial, undifferentiated material vulkanik, granit dan gneiss).

Kata Kunci: logam Trace, tanah pertanian, sedimen sungai, sumber Logam, kegiatan antropogenik, faktor Pengayaan, DAS

Author Profile



AFLIZAR
Politeknik Pertanian Negeri Payakumbuh
Teknologi Pertanian
SINTA ID : 6197409
Subjects/Areas:
ID
Ilmu Tanah

	1.36 Overall Score	0.19 3 Years Score	
	91 Overall Score V2	19.5 3 Years Score V2	0 Books
	44714 Rank in National	80311 3 Years National Rank	8 IPR
Scoring	19 Rank in Affiliation	56 3 Years Affiliation Rank	

Search..

Navigation icons: back, forward, page 1, search

Filter by type: Journal Proceeding Book Other *** All**

Page 1 of 1 | Total Records : 2

Quartile	Publications	Citation
Q4	Characteristics and potential usage of dissolved silica in rice cultivation in Sumani Watershed, Sum Pertanika Journal of Tropical Agricultural Science vol: 39 issue : 4 2016-01-01 Journal	1
Q3	Effect of soil erosion and topography on distribution of cadmium (Cd) in Sumani watershed, west Suma MATEC Web of Conferences vol: 229 issue : 2018-11-14 Conference Proceedin	1

Page 1 of 1 | Total Records : 2

Navigation icons: back, forward, page 1, search

2 Documents Cited by 2 documents 8 co-authors Topics

Preview users can view an author's latest 10 documents. [View 81 references >](#)

[Set document alert](#)

Document title	Authors	Year	Source	Cited by
Effect of soil erosion and topography on distribution of cadmium (Cd) in Sumani watershed, west Sumatra, Indonesia <i>Open Access</i> View abstract Related documents	Aflizar, Aprisal, C.I., Alarima, C.I., Masunaga, T.	2018	MATEC Web of Conferences	1
Characteristics and potential usage of dissolved silica in rice cultivation in Sumani Watershed, Sumatra, Indonesia View abstract Related documents	Somura, H., Darmawan, Sato, K., (...), Aflizar, Masunaga, T.	2016	Pertanika Journal of Tropical Agricultural Science	1

Preview users can view an author's latest 10 documents.

[^ Top of page](#)

The data displayed above is compiled exclusively from documents indexed in the Scopus database. To request corrections to any inaccuracies or provide any further feedback, please use the [Author Feedback Wizard](#).

Country/territory
Limit to Exclude

View last title v

<input type="checkbox"/>	2 Afizar	1	0 Teknologi Pertanian	Indonesia
--------------------------	----------	---	-----------------------	-----------

Hide last title ^

Most recent document title:
Soil Suitability Evaluation for Sawah in Sumani Watershed in West Sumatra Indonesia using Surfer Tool

Display: 20 results per page 1 ^ Top of page

About Scopus

- What is Scopus
- Content coverage
- Scopus blog
- Scopus API

Language

- 日本語に切り替える
- 切换到简体中文
- 切换到繁体中文
- Русский язык

Customer Service

- Help
- Contact us