

to be capable of absorbing nickel; hence, they are all considered potential phytoremediator of nickel which can help lessen and eliminate contamination of sediment and water in the coastal areas.

Key words: Phytoremediation, mangroves, seagrass, seaweeds, coastal resources

CONTENT OF HUMUS OF THE SOILS FORMED UPON LIMESTONES AND DOLOMITES

Mile Markoski¹, Tatjana Mitkova¹, Marjan Andreevski², Zorica Tomić³,
Vjekoslav Tanasković¹

¹Faculty of Agricultural Sciences and Food-Skopje, University "Ss. Cyril and Methodius" in Skopje, Blvd. Aleksandar Makedonski bb. R. Macedonia

²Institute of Agriculture-Skopje. "Ss. Cyril and Methodius" in Skopje. Blvd. Aleksandar Makedonski bb. R. Macedonia.

³Faculty of Agricultural, University of Belgrad, Nemanjina 6, Belgrad-Zemun, R. Serbia

E-mail: mile_markoski@yahoo.com; mmarkoski@fznh.ukim.edu.mk

The soils formed upon lime stones and dolomites in different locations of the territory of the Republic of Macedonia have been examined. The filed researches have been performed in the course of 2010, 2011 and 2012 during which 52 basic pedological profiles were excavated, 34 of which are calcomelanosols, 14 calcocambisols and 5 profiles of red soils (terra rossa). The genesis of these soils in the evolution, classification, and the chemical properties have been described. These soils are characterized with a profile type O-A-R; A-R; A-(B)rz-T. Calcomelanosols are characterized with the highest content of humus in relation to the other soils formed on limestone and dolomite. The subtype organogenic calcomelanosols has highest mean value (19.47%). The content of humus in the Amo horizon amounts to 8.50% on average, and in the cambic horizon (B) 5.18%. In terra rossa, the average content of humus in the Amo horizon amounts 5.33%, and in the cambic horizon B(rz) it amounts to 2.13%. pH in H₂O in the subtype organogenic calcomelanosols is an average of 6.99, average value of (69% belong to the organomineral calcomelanosols. In the Amo horizon with brownised calcomelanosols is 6.12 and in the cambic horizon (B)rz, mean 6.68. calcocambisols there is debasification and acidification, due to which the solution is acidified and in the Amo horizon and (B)rz the average value of pH H₂O is 6.63. In the terra rossa the mean pH in H₂O in the humus-accumulative Amo horizon is 6.94 and in the cambic horizon (B)rz 6.72. The highest cation exchange capacity (T) appears in the humus-accumulative Amo horizon (57

cmol(+)kg⁻¹) with the organominerals calcomelanosols. The average values of the cation exchange capacity in the calcocambisols in the humus - accumulative Amo horizon is (59.53 cmol(+)kg⁻¹) and in the cambic horizon (B)rz 48.57 cmol(+)kg⁻¹. In the case of the terra rossa, the cation exchange capacity in the humus-accumulative horizon (Amo) the average is 44.62 cmol(+)kg⁻¹, and in the cambic horizon (B)rz 48.72 cmol(+)kg⁻¹.

Key words: humus, soil, limestones, dolomites.

EDAPHIC CHARACTERISTICS OF DEGRADED AREAS IN ZLATIBOR

Košanin, O.^{1*}, Knežević, M.¹, Belanović-Simić, S.¹, Vićentijević, M.²

¹University of Belgrade Faculty of Forestry

²Ministry of Agriculture and Environmental Protection

Republic of Serbia

e-mail: olivera.kosanin@sfb.bg.ac.rs*

In the study area the forest was natural vegetation in most of these areas, but due to the settlement they cleared by cutting and burning. At the site of the former forest, today extending the meadows and pastures.

The western parts of Zlatibor covered with conifer forests (forests of white - Pinus silvestris L., and black pine - Pinus nigra Arnold). In addition to the pine forests that mainly inhabited by steeper slopes and poorer, shallow soil, in the area of Zlatibor rarely meet and sessile oak (Quercus petraea (Matt.) Liebl., Hornbeam (Ostrya carpinifolia S. co p.) And birch (Betula pendula Roth).

By studying the land in the area of Zlatibor covered land on two types of geological substrates: serpentine and limestone. Properties of soils are primarily conditioned by relief, type and characteristics of the geological substrate, climate, altitude, vegetation type, method of use and the impact of erosion. Also, the edaphic characteristics of great importance and supply of soil humus, total nitrogen, available P₂O₅ and K₂O and microelements.

The paper presents the results of the study of standard physical and chemical properties of soil, soil classification affiliation, as well as the content of trace elements (zinc - Zn, Copper - Cu lead - Pb, cadmium - Cd, Ni - Ni and chromium - Cr).

to be capable of absorbing nickel; hence, they are all considered potential phytoremediator of nickel which can help lessen and eliminate contamination of sediment and water in the coastal areas.

Key words: Phytoremediation, mangroves, seagrass, seaweeds, coastal resources

CONTENT OF HUMUS OF THE SOILS FORMED UPON LIMESTONES AND DOLOMITES

Mile Markoski¹, Tatjana Mitkova¹, Marjan Andreevski², Zorica Tomić³,
Vjekoslav Tanasković¹

¹Faculty of Agricultural Sciences and Food-Skopje, University "Ss. Cyril and Methodius" in Skopje, Blvd. Aleksandar Makedonski bb. R. Macedonia

²Institute of Agriculture-Skopje. "Ss. Cyril and Methodius" in Skopje. Blvd. Aleksandar Makedonski bb. R. Macedonia.

³Faculty of Agricultural, University of Belgrad, Nemanjina 6, Belgrad-Zemun, R. Serbia

E-mail: mile_markoski@yahoo.com; mmarkoski@fznh.ukim.edu.mk

The soils formed upon lime stones and dolomites in different locations of the territory of the Republic of Macedonia have been examined. The filed researches have been performed in the course of 2010, 2011 and 2012 during which 52 basic pedological profiles were excavated, 34 of which are calcomelanosols, 14 calcocambisols and 5 profiles of red soils (terra rossa). The genesis of these soils the evolution, classification, and the chemical properties have been described. These soils are characterized with a profile type O-A-R; A-R; A-(B)rz-T. Calcomelanosols are characterized with the highest content of humus in relation to the other soils formed on limestone and dolomite. The subtype organogenic calcomelanosols has highest mean value (19.47%). The content of humus in the Amo horizon amounts to 8.50% on average, and in the cambic horizon (B) 5.18%. In terra rossa, the average content of humus in the Amo horizon amounts 5.33%, and in the cambic horizon B(rz) it amounts to 2.13%. pH in H₂O in the subtype organogenic calcomelanosols is an average of 6.99, average value of (69% belong to the organomineral calcomelanosols. In the Amo horizon with brownised calcomelanosols is 6.12 and in the cambic horizon (B)rz, mean 6.68, calcocambisols there is debasification and acidification, due to which the solution is acidified and in the Amo horizon and (B)rz the average value of pH H₂O is 6.63. In the terra rossa the mean pH in H₂O in the humus-accumulative Amo horizon is 6.94 and in the cambic horizon (B)rz 6.72. The highest cation exchange capacity (T) appears in the humus-accumulative Amo horizon (57

cmol(+)kg⁻¹) with the organominerals calcomelanosols. The average values of the cation exchange capacity in the calcocambisols in the humus - accumulative Amo horizon is (59.53 cmol(+)kg⁻¹) and in the cambic horizon (B)rz 48.57 cmol(+)kg⁻¹. In the case of the terra rossa, the cation exchange capacity in the humus-accumulative horizon (Amo) the average is 44.62 cmol(+)kg⁻¹, and in the cambic horizon (B)rz 48.72 cmol(+)kg⁻¹.

Key words: humus, soil, limestones, dolomites.

EDAPHIC CHARACTERISTICS OF DEGRADED AREAS IN ZLATIBOR

Košanin, O.^{1*}, Knežević, M.¹, Belanović-Simić, S.¹, Vićentijević, M.²

¹University of Belgrade Faculty of Forestry

²Ministry of Agriculture and Environmental Protection

Republic of Serbia

e-mail: olivera.kosanin@sfb.bg.ac.rs*

In the study area the forest was natural vegetation in most of these areas, but due to the settlement they cleared by cutting and burning. At the site of the former forest, today extending the meadows and pastures.

The western parts of Zlatibor covered with conifer forests (forests of white - Pinus silvestris L., and black pine - Pinus nigra Arnold). In addition to the pine forests that mainly inhabited by steeper slopes and poorer, shallow soil, in the area of Zlatibor rarely meet and sessile oak (Quercus petraea (Matt.) Liebl., Hornbeam (Ostrya carpinifolia S. co p.) And birch (Betula pendula Roth).

By studying the land in the area of Zlatibor covered land on two types of geological substrates: serpentine and limestone. Properties of soils are primarily conditioned by relief, type and characteristics of the geological substrate, climate, altitude, vegetation type, method of use and the impact of erosion. Also, the edaphic characteristics of great importance and supply of soil humus, total nitrogen, available P₂O₅ and K₂O and microelements.

The paper presents the results of the study of standard physical and chemical properties of soil, soil classification affiliation, as well as the content of trace elements (zinc - Zn, Copper - Cu lead - Pb, cadmium - Cd, Ni - Ni and chromium - Cr).



WASWAC

Leopoldo C.



Belgrade University
Faculty of Forestry

3rd Conference of the World Association of Soil and Water Conservation

Belgrade, August 22 - 26, 2016.



3rd Conference of the World Association of Soil and Water Conservation WASWAC

August 22 – 26, 2016
Belgrade, Republic of Serbia

Conference Abstracts

- Publisher:** University of Belgrade, Faculty of Forestry
- Editor:** Miodrag Zlatić
- Editorial Board:** Miodrag ZLATIĆ – University of Belgrade, Faculty of Forestry, Belgrade, Serbia
- Stanimir KOSTADINOV – University of Belgrade, Faculty of Forestry, Belgrade, Serbia
- Nada DRAGOVIĆ – University of Belgrade, Faculty of Forestry, Belgrade, Serbia
- Editorial Office:** Faculty of Forestry
Kneza Višeslava 1
11030 Belgrade
Serbia
Phone: +381 11 3053 990
Fax: +381 11 2545 485
e-mail: biblioteka@sfb.bg.ac.rs
www.sfb.bg.ac.rs
- Organiser:** University of Belgrade, Faculty of Forestry, Belgrade
Co-organiser: World Association of Soil and Water Conservation (WASWAC)
- Technical Editor:** Ivan Malušević, Siniša Polovina
- Circulation:** 300
- Printing:** Planeta print, Belgrade
- ISBN:** 978-86-7299-249-6

CONTENTS

OPENING KEYNOTE PAPERS	19
<i>Panos Panagos, Pasquale Borrelli, Katrin Meusburger, Emanuele Lugato, Cristiano Ballabio, Jean Poesen, Christine Alewell, Luca Montanarella</i>	
SOIL EROSION IN EUROPE: CURRENT STATUS, FUTURE CLIMATE AND LAND USE SCENARIOS	21
<i>Miodrag Zlatić, Mirjana Todosijević, Katarina Lazarević, Nada Dragović, Gordana Vukelić</i>	
DEMOGRAPHIC TRENDS, CLIMATE CHANGES AND ISSUES OF SUSTAINABLE LAND MANAGEMENT	22
<i>Rattan Lal</i>	
CONSERVING SOIL AND WATER RESOURCES FOR CLIMATE-RESILIENT AGRICULTURE	23
<i>José Luis Rubio</i>	
SOIL AND WATER CONSERVATION IMPLICATIONS ON SOIL SECURITY AND THE DECLINE OF CIVILIZATIONS	25
TOPIC A: New challenges to soil and water resources in condition of climate change	27
Keynote papers	
<i>Winfried E.H. Blum</i>	
LIMITING FACTORS AND TIME SCALES FOR SOIL CARBON SEQUESTRATION TO MITIGATE CLIMATE CHANGE	31
Papers	
<i>Agim Leonard Chimaobi, Igwe Charles Arinze, Onweremadu Emmanuel Uzoma, Oti Nnenna.N</i>	
THE EFFECT OF ORGANIC AMENDMENT ON NUTRIENT RETENTION OF SOILS OF SELECTED PARENT MATERIAL UNDER SIMULATED RAINFALL IN SOUTHEASTERN NIGERIA	34
<i>Sheng Du, Bian-Lan Song, Jin-Hong Guan, Guo-Qing Li, Wei-Yu Shi</i>	
SUBSTANTIAL CARBON ACCUMULATION IN SOILS OF FOREST ECOSYSTEMS IN LOESS PLATEAU	35