



# ABSTRACT BOOK



## 9<sup>th</sup> International Soil Science Congress on "The Soul of Soil and Civilization"

Soil Science Society of Turkey Cooperation with  
Federation of Eurasian Soil Science Societies

14 - 16 October 2014, Side, Antalya / Turkey

### Editors :

Dr.Rıdvan KIZILKAYA  
Ondokuz Mayıs University, Turkey

Dr.Coşkun GÜLSER  
Ondokuz Mayıs University, Turkey



Cover design by Kayrasoft

**Editors:**

Dr.Rıdvan Kızılkaya  
Ondokuz Mayıs University, Faculty of Agriculture  
Department of Soil Science and Plant Nutrition  
55139 Samsun, Turkey

Dr.Coşkun Gülser  
Ondokuz Mayıs University, Faculty of Agriculture  
Department of Soil Science and Plant Nutrition  
55139 Samsun, Turkey

Copyright © 2014 by Soil Science Society of Turkey and Federation of Eurasian Soil Science Societies.  
All rights reserved

International Standard Book Number – ISBN (print) 979-605-63090-2-1  
ISBN (online) 979-605-63090-3-8

This Abstract book has been prepared from different abstracts sent to the congress secretary only by making some changes in the format. Scientific committee regret for any language and/or aim-scope.

All rights reserved. No parts of this publication may be reproduced, copied, transmitted, transcribed or stored in any form or by any means such as mechanical, electronic, magnetic, optical, chemical, manual or otherwise, without prior written permission from copyright owner.

Publication date : 15 August 2014

**Press**

Erol Ofset Matbaacılık Yayıncılık Ambalaj San. Ve Tic.Ld.Şti.  
Pazar Mah. Necati Efendi Sok. No.41/A, İlkadım, Samsun, Turkey



Visit the Congress web site at  
<http://www.soil2014.com>

Visit the Soil Science Society of Turkey web site at  
<http://www.toprak.org.tr>

And Visit the Federation of Eurasian Soil Science Societies web site at  
<http://www.fesss.org>

## ORGANIZING COMMITTEE



**Dr. Coskun GÜLSER**, Secretary  
Ondokuz Mayıs University, Turkey



**Dr. Ridvan KIZILKAYA**, President  
Ondokuz Mayıs University, Turkey



**Dr. Tayfun AŞKIN**, Secretary  
Ordu University, Turkey



**Dr. Orhan DENGİZ**, Secretary  
Ondokuz Mayıs University, Turkey



**Dr. Ayten NAMLI**, Member  
Ankara University, Turkey



**Dr. Fariz MIKAYILSOY**, Member  
Selçuk University, Turkey



**Dr. Evgeny SHEIN**, Member  
Moscow State University, Russia



**Dr. Amin ISMAYILOV**, Member  
University of Architecture and  
Construction, Azerbaijan



**Dr. Maira KUSSAINOVA**, Member  
Institute of Soil Science and  
Agrochemistry, Kazakhstan



**Oksana FOTINA**,  
Linguistic assistant  
Perm State Agricultural Academy,  
Russia



**Dr. Svatopluk MATULA**,  
Contact person in Europe  
Czech university of Life Sciences  
Prague, Czech Republic



**Dr. Marketa MIHALIKOVA**,  
Contact person in Europe  
Czech university of Life Sciences  
Prague, Czech Republic



#### Board of Soil Science Society of Turkey

Dr.Ayten NAMLI, President  
Dr.Rıdvan KIZILKAYA, Vice President  
MsC.M. Onur AKÇA, General Secretary  
Dr.Coşkun GÜLSER, Member  
Dr.Öğuz Can TURGAY, Member  
Dr.Derya SÜREK, Member  
Dr.H.Emrah ERDOĞAN, Member

#### Scientific Committee

Dr.Abdulla SAPAROV, Kazakhstan  
Dr.Ahmet MERMUT, Turkey  
Dr.Alhan SARIYEV, Turkey  
Dr.David MULLA, USA  
Dr.Ertuğrul AKSOY, Turkey  
Dr.Galina STULINA, Uzbekistan  
Dr.Garib MAMMADOV, Azerbaijan  
Dr.Gönül Bilgehan AYDIN, Turkey  
Dr.Hakan ELÇİ, Turkey  
Dr.Hayriye İBRİKÇİ, Turkey  
Dr.Iraida SAMOFALOVA, Russia  
Dr.İlhami BAYRAMIN, Turkey  
Dr.Jae YANG, South Korea  
Dr.Konstantin PACHIKIN, Kazakhstan  
Dr.Mehmet AYDIN, South Korea  
Dr.Mustafa BOLCA, Turkey  
Dr.Nur OKUR, Turkey  
Dr.Pavel KRASILNIKOV, Russia  
Dr.Sait GEZGIN, Turkey  
Dr.Sara MAMMADOVA, Azerbaijan  
Dr.Sergei SHOBA, Russia  
Dr.Svatapluk MATULA, Czech Republic  
Dr.Tatiana MINKINA, Russia  
Dr.Taşkın ÖZTAŞ, Turkey  
Dr.Yakov PACHEPSKY, USA  
Dr.Yusuf KURUCU, Turkey

Webmaster : **KAYRASOFT** ● )))

Contact :  
Soil Science Society of Turkey

Şenkal Sokak 8/6A, Siteler, Ankara, Turkey  
Ankara University, Faculty of Agriculture, Department of Soil Science and Plant Nutrition,  
06110 Dışkapı, Ankara, Turkey

Web: [www.toprak.org.tr](http://www.toprak.org.tr) and [www.soil2014.com](http://www.soil2014.com)  
E-mail: [info@toprak.org.tr](mailto:info@toprak.org.tr) and [oc@soil2014.com](mailto:oc@soil2014.com)

#### Board of Federation of Eurasian Soil Science Societies

Dr.Ayten NAMLI, President, Turkey  
Dr.Coşkun GÜLSER, Vice President, Turkey  
Dr.Rıdvan KIZILKAYA, General Secretary, Turkey  
Dr.Fariz MİKAYİLSOY, Member, Turkey  
Dr.Sergei SHOBA, Member, Russia  
Dr.Garib MAMMADOV, Member, Azerbaijan  
Dr.Abdulla SAPAROV, Member, Kazakhstan

Dr.Abdullah BARAN, Turkey  
Dr.Ajit VARMA, India  
Dr.Aydın ADİLOĞLU, Turkey  
Dr.Donald GABRIELS, Belgium  
Dr.Fusun GÜLSER, Turkey  
Dr.Günay ERPUL, Turkey  
Dr.Hikmet GÜNAL, Turkey  
Dr.İbrahim ORTAŞ, Turkey  
Dr.İmanverdi EKBERLİ, Turkey  
Dr.Kadir SALTALI, Turkey  
Dr.Léon-Etienne PARENT, Canada  
Dr.Mikhail MAZIROV, Russia  
Dr.Murat MERT, Turkey  
Dr.Necat AĞÇA, Turkey  
Dr.Nicola SENESI, Italy  
Dr.Olga EROKHINA, Kazakhstan  
Dr.Sahriye SÖNMEZ, Turkey  
Dr.Salih AYDEMİR, Turkey  
Dr.Selim KAPUR, Turkey  
Dr.Sema TETİKER, Turkey  
Dr.Suat ŞENOL, Turkey  
Dr.Svetlana SUSHKOVA, Russia  
Dr.Şefik TÜFENKÇİ, Turkey  
Dr.Tubukhanım GASIMZADE, Azerbaijan  
Dr.Tuğrul YAKUPOĞLU, Turkey  
Dr.Yasemin KAVDIR, Turkey



# 9<sup>th</sup> International Soil Science Congress on "The Soul of Soil and Civilization"

14 - 16 October, 2014  
Side, Antalya/ Turkey



## Soil contamination study around the Buchim Copper Mine, Republic of Macedonia

Todor Serafimovski \*, Gerasim Konzulov, Goran Tasev, Violeta Stefanova, Sare Sarafilov

Goce Delcev University, Faculty of Natural and Technical Sciences, 2000 Stip, Macedonia

### Abstract

One of the major emission sources of some metals in the eastern part of the R. Macedonia is Bucim copper mine and flotation, near the town of Radovis. Ore excavation is from open pit and the ore tailings are stored in the open, in mine vicinity. The produced copper ore from the mine is processed in the flotation plant; after the flotation of copper minerals, the flotation tailings are separated, disposed of and deposited on a dump site in an adjacent valley near the village Topolnica. During the 35 years of continuous exploitation around the Buchim Mine was created surface waste dump were have been stored more than 150 Mt and more than 100 Mt material within the hydrotailing dam. Within this study a total content of 20 elements was determined in soil samples taken from the vicinity of the "Bucim" mine, covering an area of 14.2 km<sup>2</sup>. Analyses were performed by the ICP-AES. The results have been compared to new Dutchlist and NOAA standards and the following was concluded: As values ranged 13.1÷225 ppm with 20 samples above the optimum (29 ppm As) and 7 above action value (55 ppm As), in that context Cd values ranged 0.67÷17.9 ppm with 17 values above optimum (0.8 ppm Cd) and 1 over the action value (12ppm Cd), Cr with range 30.1÷171 ppm with 6 over optimal value (100ppm Cr) and none above action value (380ppm Cr), Cu with range 17.8÷1734 ppm with 16 over optimal value (36ppm Cu) and 3 above action value (190ppm Cu), Ni with range 9.8÷69.4 ppm with 5 over optimal value (35ppm Ni) and none above action value (210ppm Ni), Pb with range 46÷3456 ppm with 19 over optimal value (85ppm Pb) and 1 above action value (530ppm Pb), Zn with range 88÷3438 ppm with 12 over optimal value (140ppm Zn) and 1 above action value (720ppm Zn), Mn with range 169÷998 ppm with 25 over optimal value (33ppm Mn) and none above action value (48ppm Mn), Fe range 0.73÷5.02% with 21 over optimal value (1.8% Fe) and none above action value (3.2% Fe). The V, Al, Co, also, showed some increased values, but not more than optimal concentration.

**Key words:** Buchim mine, soil, copper, arsenic, contamination.

\*Corresponding author : Todor Serafimovski  
Goce Delcev University, Faculty of Natural and Technical Sciences, 2000 Stip, Macedonia  
Tel : +38932550575

E-mail : todor.serafimovski@ugd.edu.mk