



Marco CONTIN

ACTUAL Position

Associate professor

Personal Information

Department of Agrifood, Environmental and Animal Sciences, University of Udine,

📍: 33100 Udine, via delle Scienze 206 - 33100 Udine (Italy)

✉: marco.contin@uniud.it

☎ +39 0432 558643

Work experience

2014 to present **Associate Professor of Agricultural Chemistry AGR/13 – at the Department of Agrifood, Environmental and Animal Sciences, University of Udine (I)**

2001 to 2014 **Researcher of Agricultural Chemistry AGR/13 – at the Department of Agrifood, Environmental and Animal Sciences, University of Udine (I)**

1992 to 1993 **Research fellow** at Soil Science Department - IACR Rothamsted, Harpenden (UK).

1990 to 2001 **Graduate Technician at the Experimental Farm A.Servadei, University of Udine (I)**

Education and Training

2003 **PhD in Soil Biology at Coventry University (UK) - School of Science and the Environment**

1988 **MSc in Agricultural Science at University of Udine**

Mother tongue	Italian
Foreign languages	English
Level	C1

Other activities

Coordinator of the Environment and Territory Section of Department of Agrifood, Environmental and Animal Sciences from 2020 to 2023

Member of the doctorate board in Environmental Life Sciences at the University of Trieste

Fellow of the following scientific societies:

Member of the SICA (Società Italiana di Chimica Agraria)

Member of the IUSS (International Union of Soil Sciences)

Member of the IHSS (International Humic Substances Society)

Member of CIEC (International Scientific Centre of Fertilizers)

Member of EGU (European Geosciences Union)

Publications

Author or co-author of more than 50 scientific publications indexed by Scopus/WoS, H-index 18, Citations 1450.
[ORCID: 0000-0002-7052-1990]

Editorial board of Applied Soil Ecology (Elsevier), and Associate Editor of Frontiers in Environmental Science Section Soil Processes.

Research activity

The research activity initially focused on soil organic matter and microbial biomass particularly related to environmental problems. The activity on humic substances was aimed to the development and set-up of analytical methods to measure acidic functional groups, interactions between humic substances and synthetic humic-like molecules with ionic detergents, fractionation and characterization in liquid chromatography (RP-, SEC-HPLC), ultra-filtration, isoelectrophoresis, FT-IR, Electron Paramagnetic Resonance (EPR) spectroscopy and cyclic voltammetry. Moreover, some of my work focused on the assessment of chemical and biochemical stabilization of organic C in soils.

The research on soil microbial biomass initially focused on the assessment and validation of some analytical methods to measure size and activity of micro-organisms in soil (biomass C and biomass N by fumigation extraction, soil ATP, carbon dioxide evolution). Later, I studied the metabolic status of microbial biomass according to its capability to survive starvation and environmental stresses (temperature and moisture), and its stimulation by specific trigger molecules. Recently, I'm involved into studies on the mechanisms governing the mineralization of natural soil organic matter (abiotic-gate theory), methane oxidation and methanogenesis in soils affected by contamination from potentially toxic metals. Afterwards, my research interests were expanded to remediation of metal contaminated soils by immobilization and chemical fixation into Fe oxides and zero-valent Fe. Soil redox changes were used to improve metal fixation. Soil redox fluctuations are natural processes that involve many agricultural lands (e.g. paddy rice cultivation) and soils or sediments subjected to periodical flooding. They have an important impact on some micro-nutrients phyto-availability. Ageing of metals sorbed onto Fe and Mn oxides can be used as natural attenuation of soluble metals influencing their transport along soil-plant-groundwater. Changes of metals speciation were investigated by both sequential extractions and X-ray absorption spectroscopy.

Another research topic of my interest is related to bioenergy byproducts (biochar, digestates, wood ashes), organic and organo-mineral fertilizers and soil amendments. Experimental work has been carried out, both in field and in laboratory scale, to understand the mechanism of action of peat-based organo-mineral fertilizers, lignosulfonate and biochar. More-over some recent work considered the potential of composted amendments to be used as growing media in pots as peat substitute.

Conference

Presenter in numerous scientific congresses (more than 150 abstract submitted), with some invited speaker presentations..

Teaching activities

I delivered several topics in both graduate and post-graduate course:

Chemistry and fertility of soils. (Agricultural Science Degree) 2019-actual.

Bioenergy by-products (Agricultural Science Master Degree) From 2010 to 2020.

Wood chemistry (Agricultural Science Degree) 2017-actual.

Fertilizers and grapevine nutrition (Viticulture and Oenology Master Degree) 2017-18; 2018-19.

Methods in soil and plant analyses – (Agricultural Science Master Degree). 2014-19.

Pedology - (Bachelor's programme in Environmental sciences) – University of Nova Gorica (SLO) 2009-2010.

Soil Chemistry and Biology - (Bachelor's programme in Viticulture and Enology) – University of Nova Gorica (SLO) 2008-2014.

Chemistry and Biochemistry of Fertilization (Agricultural Science Master Degree). From 2002 to 2012.

Fertilizer Chemistry (Viticulture and Oenology Master Degree) 2003, 2004 and 2007.

Research program leader

I was coordinator or leader of the following projects:

Biological activity and physical parameters of composted growing media: PRIN 2006-2007.

Treatment and recycling sewage sludge from peri-urban areas of Hanoi (VN). Local Partner: Agricultural University of Hanoi (VN). Regione FVG 2011-2013.

Assessing the ability of natural zeolites from the Munella region (Albania) to reduce the mobility of heavy metals in soils and sediments contaminated by different sources. Bilateral Italy – Albania, 2012-2014.

Knowledge transfer in agriculture: added value for environment protection (Agri-Knows). Interreg Program Italia-Slovenia 2012-2014.

Green and sustainable remediation of contaminated soils for urban land use." Ministry of Education of Slovenia. Responsible prof. Lestan D. - University of Lubiana (SLO) 2014-2015.

Liquistrip: ammonia stripping from liquid manures and digestates to decrease nitrification in amended soils. CRITA 2013-2015. Regione Friuli Venezia Giulia L.R., 26

Environmental risk analysis for evaluation of natural and anthropic background threshold levels of mercury in Isonzo basin soils. Regione FVG: 2017-2020

Autorizzo il trattamento dei miei dati personali ai sensi dell'art. 13 D. Lgs. 30 giugno 2003 n°196 – “Codice in materia di protezione dei dati personali” e dell'art. 13 GDPR 679/16 – “Regolamento europeo sulla protezione dei dati personali”

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