



UNIVERSITÀ
DI TORINO



Department of Agricultural,
Forest and Food Sciences

Prof. Daniel Said Pullicino
Soil Science & Biogeochemistry

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Curriculum Vitae

Daniel Said Pullicino is an Associate Professor in Agricultural Chemistry at the Department of Agricultural, Forest and Food Sciences of the University of Torino, and serves as Editor-in-Chief of the international soil science journal *Geoderma* (Elsevier). He obtained his BSc(Hons) and MSc degrees in Chemistry at the University of Malta, and subsequently read for his PhD in Agricultural Chemistry at the University of Perugia (Italy). In 2014 he was appointed Research Scientist at the Department of Agricultural, Forest and Food Sciences of the University of Torino, and in 2018 obtained his national scientific habilitation for the role of Full Professor in Agricultural Chemistry.

Research Focus: As a soil scientist, his research interests mainly develop around the biogeochemical cycles of carbon and nutrient elements in soil across different scales. His has been devoted to advancing our understanding of soil organic matter composition, stabilization and turnover, and the interactions between C, N and Fe cycling in terrestrial ecosystems, particularly those that experience redox cycling. His studies on different biotic and abiotic soil process, carried out as part of the Rice Agro-ecosystem and Environment Group (www.raer.unito.it), has contributed to providing new conceptual developments on organic matter and element cycling in rice paddies and has laid the groundwork for unravelling the carbon source/sink functions and microbial nitrogen cycling in rice paddy soils amongst others. This field of research has global implications for greenhouse gas emissions, climate change and environmental pollution.

Teaching Focus: His lecturing commitments include courses in 'Agricultural chemistry' at undergraduate level and 'Soil organic matter and nutrient management in agroecosystems' at postgraduate level. Moreover, he is involved in delivering practical courses focusing on conserving soil fertility and enhancing environmental sustainability in farms, and providing decision support to different stakeholders. He is highly committed to create enthusiasm in students for the study of soil biogeochemistry, soil fertility and nutrient cycling, and to stimulate them to appreciate the relevance of these topics for both agricultural production and environmental sustainability.

Affiliations to scientific societies

- Royal Society of Chemistry (RSC), London, UK
- International Union of Soil Sciences (IUSS)
- European Geosciences Union (EGU)
- Italian Soil Science Society (SISS)
- Italian Society of Agricultural Chemistry (SICA)

Recent Projects

- Innovative concepts and technologies for ecologically sustainable nutrient management in agriculture aiming to prevent, mitigate and eliminate pollution in soils, water and air (ECONUTRI)
- Multifunctional and resilient agriculture and forestry systems for the mitigation of climate change risks (AGRITECH)
- Innovative water management in rice paddies (RISWAGEST)
- Enhanced biological N fixation through improved P acquisition by leguminous plants (FOS4FIX)
- Carbon source/sink functions of rice agro-ecosystems and implications for mitigating green-house gas emissions (CarboPAD)

Selected Publications

- Said-Pullicino et al. 2021. Redox-driven changes in water-dispersible colloids and their role in carbon cycling in hydromorphic soils. *Geoderma* 385, 114894.
- Wang et al. 2020. Thiolated arsenic species observed in rice paddy pore waters. *Nature Geoscience* 13, 282-287.
- Verhoeven et al. 2019. Early season N₂O emissions under variable water management in rice systems: Source-partitioning emissions using isotope ratios along a depth profile. *Biogeosciences* 16, 383-408.
- Bertora et al. 2018. Dissolved organic carbon cycling, methane emissions and related microbial populations in temperate rice paddies with contrasting straw and water management. *Agriculture, Ecosystems & Environment* 265, 292-306.
- Said-Pullicino et al. 2016. Linking dissolved organic carbon cycling to organic carbon fluxes in rice paddies under different water management practices. *Plant and Soil* 401, 273-290.



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Curriculum Vitae

Daniel Said Pullicino, Professore Associato in Chimica Agraria presso il Dipartimento di Scienze Agrarie, Forestali e Alimentari dell'Università di Torino, ha conseguito la laurea magistrale *cum laude* in Chimica presso l'Università di Malta, e il dottorato di ricerca presso il Dipartimento di Scienze Agrarie e Ambientali dell'Università degli Studi di Perugia. Attualmente ricopre anche il ruolo di *Editor-in-Chief* della rivista internazionale Geoderma (Elsevier BV). E' autore di 57 pubblicazione di lavori internazionali su riviste indicizzate ed ha un H-Index pari a 23, ed è in possesso dell'Abilitazione Scientifica Nazionale alle funzioni di professore di prima fascia (SSD: AGR/13). Il Prof. Said Pullicino ha trascorso diversi periodi all'estero in vari istituti di ricerca tra i quali l'Università di Sydney (Australia), Martin-Luther-Universität Halle-Wittenberg (Germania), Rothamsted Research (Regno Unito), e Universidad Miguel Hernández de Elche (Spagna). Ha partecipato a vari progetti di ricerca internazionali, nazionali e regionali, sia come coordinatore, sia come coproponente.

Ricerca: Le sue attività di ricerca trattano principalmente lo studio dei processi che controllano la composizione, stabilizzazione e il turnover della sostanza organica del suolo, e le interazioni con i cicli biogeochimici dei nutrienti, nonché gli effetti di diverse tecniche colturali su detti processi ed implicazioni sull'efficienza d'uso dei nutrienti e sostenibilità ambientale di diversi agro-ecosistemi. Ha rivolto particolari attenzioni allo studio delle interazioni tra i cicli biogeochimici del carbonio, dell'azoto e del ferro nei suoli soggetti a variazioni delle condizioni redox, e le implicazioni sulla stabilizzazione della sostanza organica del suolo, sulle emissioni di gas ad effetto serra, e sulla biodisponibilità ed efficienza d'uso dell'azoto. Molti dei suoi lavori trattano lo sviluppo e applicazione di metodi di analisi isotopiche e spettroscopiche nello studio dei cicli biogeochimici degli elementi.

Didattica: E' titolare degli insegnamenti di "Chimica Agraria" nel Corso di Laurea in Scienze e Tecnologie Agrarie e di "Soil organic matter and nutrient management in agroecosystems" nel Corso di Laurea Magistrale in Scienze Agrarie, nonché di varie esercitazioni interdisciplinari in diversi corsi di laurea di primo e secondo livello. È fortemente dedicato a promuovere lo studio della biogeochimica e della fertilità del suolo tra gli studenti, per stimolarli ad apprezzare l'importanza di questi argomenti sia per la produzione agraria sia per la sostenibilità ambientale dei sistemi colturali.

Affiliazioni a Società Scientifiche

- Royal Society of Chemistry (RSC), Londra, Regno Unito (Nr. Iscrizione all'albo: 351085)
- International Union of Soil Sciences (IUSS)
- European Geosciences Union (EGU)
- Italian Soil Science Society (SISS)
- Italian Society of Agricultural Chemistry (SICA)

Recent Projects

- Innovative concepts and technologies for ecologically sustainable nutrient management in agriculture aiming to prevent, mitigate and eliminate pollution in soils, water and air (ECONUTRI)
- Multifunctional and resilient agriculture and forestry systems for the mitigation of climate change risks (AGRITECH)
- Gestione innovativa dell'acqua in risaia (RISWAGEST)
- Favorire l'acquisizione del fosforo nelle leguminose da sovescio per aumentarne l'azotofissazione (FOS4FIX)
- Carbon source/sink functions of rice agro-ecosystems and implications for mitigating green-house gas emissions (CarboPAD)

Selezione di pubblicazioni recenti

- Said-Pullicino et al. 2021. Redox-driven changes in water-dispersible colloids and their role in carbon cycling in hydromorphic soils. Geoderma 385, 114894.
- Wang et al. 2020. Thiolated arsenic species observed in rice paddy pore waters. Nature Geoscience 13, 282-287.
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