

1. Record Nr.	UNINA9910897976903321
Titolo	Greenhouse Gas Regulating Microorganisms in Soil Ecosystems : Perspectives for Climate Smart Agriculture // edited by Santosh R. Mohanty, Bharati Kollah
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2024
ISBN	9783031705694 3031705696
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (IX, 351 p. 37 illus., 32 illus. in color.)
Disciplina	363.73874
Soggetti	Ecology Agriculture Agricultural ecology Environmental management Environmental Sciences Agroecology Environmental Management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	1 Sources and Sinks of Greenhouse Gasses (GHG) in Agricultural Soil Ecosystem -- 2 Soil and Environmental Variables Influencing Greenhouse Gas Cycling in an Agroecosystem -- 3 Greenhouse Gas Cycling and Ecosystem Services -- 4 Greenhouse Gas Emission from Different Fertilizers (Organic, Inorganic and Integrated) in Management Agroecosystems -- 5 Greenhouse Gas Emissions from Agroecosystems Under Conservation Agriculture -- 6 Factors Affecting Carbon Sequestration and Greenhouse Gas Emission in Agroecosystems -- 7 Prediction of Crop Response to Atmospheric Greenhouse Gas Concentration and Climate Parameters -- 8 Impact of Elevated CO <sub>2</sub> , and Temperature on Greenhouse Gas Emission and Decomposition -- 9 Carbon Speciation by Microbes in Soil -- 10 Nitrogen Cycle, N <sub>2</sub> O Emission, and Its Decomposition Processes in Soil -- 11 Soil Ecosystem Services and the Greenhouse Gas Emission and Cycling -- 12 Diversity

of Greenhouse Gas Producing and Mitigating Microbes in Soil -- 13  
Strategies to Improve N Use Efficiency to Minimize N<sub>2</sub>O Emission from  
Agricultural Soil -- 14 Impact of Fertilizers on Greenhouse Gas  
Mitigating Microbes in Agroecosystem -- 15 Microbial Diversity Under  
Organic Fertilizer Management Systems and Identification of Best  
Fertilizer Practice -- 16 Climate Resilient Agriculture -- 17 Carbon  
Sequestration Strategies in Response to Fertilizer Application -- 18  
Organic Farming -- 19 Long-Term Fertilizer Experiments -- 20  
Synthesis Report on Greenhouse Gas Emissions from Agroecosystems.

---

Sommario/riassunto

This volume comprehensively covers soil microbial processes that regulate the flux of greenhouse gasses (GHG) from agricultural soils, in an effort to address how GHG regulating microbes can be used to mitigate harmful climate change impacts on agriculture. The chapters define the linkages among soil microbial functioning, crop responses, ecosystem functioning, and GHG cycling processes. The book is framed through three major theme, including source and sink of GHG, microbial processes regulating GHG, and agricultural strategies and technologies to mitigate GHG emissions. The chapters highlight the fundamentals of soil microbial diversity and interactions with climate changing factors, soil carbon dynamics in response to different agricultural practices, conservation agriculture strategies to reduce GHG emissions from agriculture, and climate change mitigation through organic and climate-smart farming. The book is intended for policy makers, students, and researchers of environmental science, agriculture, soil science, and soil microbiology.

---