

1. Record Nr.	UNINA9910850887903321
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Titolo	Tracing the Sources and Fate of Contaminants in Agroecosystems : Applications of Multi-stable Isotopes // edited by Joseph Adu-Gyamfi, Grzegorz Skrzypek, Gwenaël Imfeld, Lee Heng
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2024
ISBN	3-031-47265-9
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (172 pages)
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Disciplina	363.7063
Soggetti	Environmental monitoring Pollution Soil science Water Hydrology Agriculture Geochemistry Environmental Monitoring Soil Science
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	-- Stable isotope tracers used for identification of contaminants in agro-ecosystems. -- Conceptual sampling design for tracing agropollutants on a catchment scale. -- Principles of mixing and fractionation models. .-Compound-specific isotope analyses to investigate pesticide transformation in soil and water. -- Stable oxygen isotope composition of phosphates to investigate phosphorus cycling in the soil-plant continuum. -- Stable sulphur and oxygen isotope composition of sulphates to disentangle agrocontaminants from other sources of sulphur agrosystems. -- Quantifying sediment and associated pollutant sources in agricultural catchments using fallout radionuclides and compound-specific isotope analyses. --

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## Conclusions and perspectives forward.

### Sommario/riassunto

The objective of this open access book is to present protocols, methodologies, and standard operating procedures (SOPs) used for the identification of sources, transport, and fate of agro-contaminants and illustrate them with several case studies of successful applications. The Soil and Water Management & Crop Nutrition (SWMCN) Subprogramme of the Joint Food and Agriculture Organization (FAO)/International Atomic Energy Agency (IAEA) Centre of Nuclear Techniques in Food and Agriculture, through a Coordinated Research Project (CRP) in partnership with national and international research institutes, developed and evaluated a set of analytical techniques (the toolbox). The toolbox integrates multiple isotope tracers that provide information on the origins and pathways of multiple pollutants through agro-ecosystems, thereby providing more accurate guidance on mitigations. However, land management strategies to address and control the transport of pollutants from soil to water bodies remain the shared responsibility of farm and aquaculture operators, agro-chemical manufacturers, and policymakers in food and agriculture as well as the mining sectors. This book is structured into eight chapters covering (i) an overview of the book's content, (ii) guidelines for designing water sampling programmes, (iii) the use of mixing models applicable to tracers for water pollution studies, (iv) compound-specific isotope analyses to investigate pesticide degradation in agricultural catchments, (v) the use of stable oxygen isotope composition of phosphate to investigate phosphorous in soil-plant continuum, (vi) the use of stable sulphur isotopes to disentangle agro-pollutants from other contaminants, (vii) nuclear tools used in sediment source apportionment, and (viii) the conclusions and perspectives forward. The book offers up-to-date information, and we hope it is a great source of information for students, researchers, and policymakers. The SWMCN subprogramme thanks all the contributors involved in the preparation of this publication.

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