



Field experiments are conducted in southern China together with scientists from Nanjing Agricultural University to test various soil amendments for reducing Cd and As uptake into rice.

SOIL CHEMISTRY



Understanding soil chemical processes controlling nutrient and contaminant behavior in terrestrial ecosystems to sustain soil quality and food security.

Research Areas

- Trace metal speciation and bioavailability in contaminated soils and sediments;
- Rhizosphere processes and plant uptake of Cd and As in irrigated rice;
- Redox biogeochemistry of Fe and its coupling with other element cycles (C, N, P, As, Hg, and others).

Regions

Bulgaria, China, Germany, Switzerland, and Thailand.

Partners

Nanjing Agricultural University; Kasetsart University; Bulgarian Academy of Sciences; and University of Tübingen.

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Contribution to the WFSC

Understanding biogeochemical processes controlling trace element speciation, bioavailability, and plant uptake in agricultural and wetland ecosystems is essential for ensuring safe food production and sustaining soil quality. Our current projects investigate the biogeochemical cycling of Fe, Mn, S, As, Cd, and Hg in redox-affected soil environments, including contaminated rice paddy fields. One of our goals is to develop soil management strategies to minimize the uptake of toxic elements by food crops such as rice.



Prof. Ruben Kretzschmar

