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OP 12

Ciliated protists as indicators of ecosystem health: Opportunities, challenges, and case studies in Italy

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Abstract

This communication aims to provide an overview of the outcomes and the challenges encountered in using ciliated protists as indicator of ecosystem health in the framework of several projects conducted in Italy since 2009. Ciliates (and, in general, protistan microorganisms) in spite of the key roles they play in the microbial loop, still constitute a neglected component of the biodiversity, which is rarely included in ecological risk assessment plans. Ciliates are important bacterial and fungal feeders and thus, they significantly contribute to channel nutrients up to the food web. Furthermore, numerous ciliate species can be easily cultured with a short generation time, such as those selected for the setting up of our ecotoxicological experimentation (i.e., *Coleps hirtus*, *Euplotes aediculatus*, and *Rigidohymena tetracirrata*). Thus, in this context, the present communication aims to highlight the usefulness of ciliates as test organisms for the development of simple and cost-effective “prognostic” assays (i.e., able to detect sub-lethal toxicant effects of various environmental matrices) based on the exploitation of antioxidant responses as well as of “diagnostic” assays (i.e., able to detect overall ecosystem impairment) based on the analysis of the community structures of ciliates in arable soils to evaluate the potential impact of different agricultural managements.

Biosketch

Prof La Terza has earned her PhD in Protistology, University of Pisa in 1992. Her professional history and academic activities are: (1) Visiting scientist at the Fred Hutchison Cancer Research Center, Seattle (USA) in 1990-1992; (2) Postdoc fellowship, Department of Molecular, Cellular and Animal Biology, University of Camerino in 1992-1994; (3) Presently she is working as Lecturer in Ecology at the School of Biosciences and Veterinary Medicine, University of Camerino. Current research interests focus on Diversity and Ecology of Ciliates, Biomonitoring, Soil Biology and Ecology. Her consultancy activities/ participation at congresses include: (1) European Commission’s expert in the field of “Bioindication and Biodiversity in the frame of the project, Biodiversity and Bioindication to evaluate soil health” in collaboration with the Joint Research Center, Ispra (VA), Italy (2004/2006); (2) Presently she is a member of the expert committee established for the launch of the “National Monitoring Network on Soil degradation and Soil Biodiversity” at the Institute for



