Laboratory of Mycology

Fungi are a heterogeneous group of eukaryotic organisms. They are protagonists in various fields of pure and applied research and are employed in a number of sectors of biotechnologies.
The activities and researches carried out in the Laboratory of Mycology of DISTAV mainly concern the following topics.

Conservation, protection, and enhancement of mycodiversity: isolation, cryopreservation of fungal strains, and fungal polyphasic identification (by means of both morphological and molecular approach). The fungal strains enrich the CoLD-UNIGE JRU MIRRI-IT collection of UNIGE.

Medical and forensic mycology: research on non-dermatophyte fungi (NDM), agents of superficial and skin mycoses; studies on the role of fungi in forensic science (for example, the analysis of cadaveric mycoflora to estimate the postmortem interval).

Geomycology, micro-diversity of extreme environments and mycoremediation: biological role of fungi in minerogenetic processes; mycological characterization of polluted environmental compartments (including water) by eco-toxic substances; selection of biotolerant fungal strains, bioaccumulators and biodegradators of toxic substances; mycoremediation of lands and waters contaminated by metals and hydrocarbons; study of fungal communities as bioindicators.

Macrofungal biodiversity and cultivation of edible macrofungi: determination of the chemical, physical, and mineralogical properties of productive soils in relation to quality, biodiversity, and macrofungal productivity; investigations on the ecology, distribution, and cultivation of underground fungal species of food interest (truffles); characterization of food products to define a controlled and protected and/or geographical designation of the origin of spontaneous edible mushrooms, in order to prevent frauds in the food sector; cultivation of saprotrophic fungi on different substrates, both to recycle vegetable waste and to produce sporomata with enhanced properties.

Mycology in cultural heritage: isolation of biodeteriogenic fungi on artistic objects, including stone; studies on biological foxing.

Keywords: Onychomycosis, Non-dermatophyte fungi, Forensic mycology, Mushrooms of extreme environments, Mycoremediation, Geomycology, Forest micodiversity, Edible mushrooms, Underground mushrooms, Biodegradation, Organic Foxin, Collections, CoLD-UNIGE JRU MIRRI-IT of UNIGE, Cryopreservation.

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