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Titolo	Recent Advances in Lichenology [[electronic resource] ] : Modern Methods and Approaches in Biomonitoring and Bioprospection, Volume 1 / / edited by Dalip Kumar Upreti, Pradeep K. Divakar, Vertika Shukla, Rajesh Bajpai
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Soggetti	Plant genetics Microbiology Metabolism Plants Climatic changes Plant Genetics and Genomics Metabolomics Plant Systematics/Taxonomy/Biogeography Climate Change
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Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	1. The Influence of Environmental Factors on the Growth of Lichens in the Field -- 2. Sampling and interpreting Lichen Diversity Data for biomonitoring purposes -- 3. Lichens and Particulate Matter: Inter-Relations and Biomonitoring with Lichens -- 4. Monitoring lichens as indicator of atmospheric quality -- 5. Bio-monitoring in western North America: What can lichens tell us about ecological disturbances? -- 6. Community metrics under air pollution stress condition -- 7. Remote Sensing and GIS for Biodiversity conservation -- 8. Reflectance spectra

of high altitude lichens based on in-situ measurements -- 9. Lichens as agents of biodeterioration -- 10. Lichen growth and Lichenometry -- 11. Analysis of lichen metabolites, a variety of approaches.

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## Sommario/riassunto

This book discusses in detail molecular, mycobiont culture, biomonitoring and bioprospection of lichens, providing insights into advances in different fields of lichenology by applying modern techniques and approaches and examining how their application has enhanced or changed classical approaches. It offers a valuable resource, especially for beginners, students and researchers from different academic backgrounds interested in the study of lichens. In recent years, the introduction of modern analytical techniques and approaches has significantly improved our understanding of the environment, including lichens. Lichens are unique organisms which possess untapped potential as effective and reliable bioindicators, sources of therapeutic phytochemicals, and as excellent extremophiles. The unique and peculiar characteristics of lichens underline the need for a multidimensional approach to explore their potential in various fields of environment science, botany and chemistry. Modern techniques, especially molecular techniques, have greatly enriched the field of lichen taxonomy and its position in the plant kingdom, revealing little-known species and exploring their evolutionary history, while multivariate analysis and GIS approaches have established lichens as an ideal and reliable tool for monitoring air pollution. Advanced culture techniques have expanded the pharmacological applications of lichens, which was formerly restricted due to their small biomass. The advent of sophisticated analytical instrumentation has now facilitated the isolation and characterization of lichens' bioactive constituents, even in lower concentrations, as well as the estimation of their stress responses at different levels of pollution. As lichen diversity is adversely affected by increasing air pollution, there is a pressing need to develop effective management practices to conserve, restore and document lichen diversity.

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