

## Distribution and Diversity of Pyrenocarpous Lichens in India with Special Reference to Forest Health

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**Abstract :** Our nature exhibited presence of a number of unique plants which can be used as indicator of environmental condition of particular place. Lichens are unique plant which has an ability to absorb not only organic, inorganic and metaloties but also absorb radioactive nuclide substances present in the environment. In the present study pyrenocarpous lichens will be used as indicator of good forest health in a particular place. The Pyrenocarpous lichens are simple crust forming with black dot like perithecia have few characters for their taxonomical segregation as compared to their foliose and fruticose brethren. The thallus colour and nature, presence and absence of hypothallus are only few characters of thallus are used to segregate the pyrenocarpous taxa. The fruiting bodies of pyrenolichens i.e. ascocarps are perithecia. The perithecia and the contents found within them possess many important criteria for the segregation of pyrenocarpous lichen taxa. The ascocarp morphology, ascocarp arrangement, the perithecial wall, ascocarp shape and colour, ostiole shape and position, ostiole colour, ascocarp anatomy including type of paraphyses, asci shape and size, ascospores septation, ascospores wall and paraphyses are the valuable characters used for segregation of different pyrenocarpous lichen taxa. India is represented by the occurrence of the 350 species of 44 genera and eleven families. Among the different genera *Pyrenula* is dominant with 82 species followed by the *Porina* with 70 species. Recently, systematic of the pyrenocarpous lichens have been revised by American and European lichenologists using phylogenetic methods. Still the taxonomy of pyrenocarpous lichens is in flux and information generated after the completion of this study will play vital role in settlement of the taxonomy of this peculiar group of lichens worldwide. The Indian Himalayan region exhibit rich diversity of pyrenocarpous lichens in India. The western Himalayan region has luxuriance of pyrenocarpous lichens due to its unique topography and climate condition. However, the eastern Himalayan region has rich diversity of pyrenocarpous lichens due to its warmer and moist climate condition. The rich moist and warmer climate in eastern Himalayan region supports forest with dominance of evergreen tree vegetation. The pyrenocarpous lichens communities are good indicator of young and regenerated forest type. The rich diversity of lichens clearly indicates that moist of the forest within the eastern Himalayan region has good health of forest. Due to fast pace of urbanization and other developmental activities will defiantly have adverse effects on the diversity and distribution of pyrenocarpous lichens in different forest type and the present distribution pattern will act as baseline data for carried out future biomonitoring studies in the area.

**Keywords :** lichen diversity, indicator species, environmental factors, pyrenocarpous

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