

Objective

To explore three major forms of lichens: Crustose, Foliose, and Fruticose.

Introduction

Lichens are fascinating organisms composed of a symbiotic relationship between fungi and photosynthetic partners (algae or cyanobacteria). In this lab, we'll explore three major forms of lichens: Crustose, Foliose, and Fruticose.

Materials

- ☐ Various specimens of lichens (Crustose, Foliose, and Fruticose)
- ☐ Hand lenses or magnifying glasses
- ☐ Lab notebook
- ☐ Pencils, pens, markers
- ☐ Camera (optional, for documentation)

Procedure

1. **Crustose Lichens**
 1. Examine the crustose lichen specimen closely.
 2. Description: Write a brief description of the crustose lichen's physical appearance.
2. **Foliose Lichens**
 1. Observe the foliose lichen specimen with a hand lens.
 2. Description: Describe the foliose lichen's characteristics, including color, texture, and overall shape.
3. **Fruticose Lichens**
 1. Examine the fruticose lichen specimen closely.
 2. Description: Write a description of the fruticose lichen's growth pattern and any visible structures.
4. **Record Observations**

Create detailed notes on: Location Substrate (where the lichen is growing) Physical characteristics (color, texture, size, shape) Any unique features or patterns observed. Draw well-labeled diagrams of crustose, fruticose, and foliose lichens.



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Page 1 of 2.

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Observation Table

Characteristic	Crustose Lichen	Foliose Lichen	Fruticose Lichen
Attachment	Tightly adherent to substrate	Loosely attached to substrate	Not tightly attached, often bushy
Growth Form	Flat and crust-like	Leaf-like structure	Three-dimensional, shrubby or branching
Upper Surface	Often indistinct or like lower surface	Well-defined upper surface	Distinct upper surface
Lower Surface	Directly attached to substrate	Usually lighter in color, may have rhizines	May have holdfast structures
Color	Typically pale to dark colors	A range of colors, often vibrant	A variety of colors
Texture	Granular or powdery	Variable, may be smooth or textured	Bushy, tufted, or wiry
Ecological Niche	Can colonize exposed rock surfaces	Common on tree bark or wood	Found in a variety of habitats, including open areas
Habitat	Often found in open or exposed habitats	Can inhabit tree trunks, rocks, or soil	Often on trees, rocks, or other surfaces
Examples	Crustose coralline lichen, <i>Rhizocarpon</i> spp.	<i>Usnea</i> spp., <i>Parmelia</i> spp.	<i>Cladonia</i> spp., <i>Cladina</i> spp.



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Page 2 of 2.

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