



Extension

UNIVERSITY OF WISCONSIN-MADISON

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## Lichens

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**What are lichens?** Lichens are organisms that arise from mutually beneficial interactions between certain filamentous fungi, algae and yeasts. The filamentous fungi provide the physical structures of the lichens, as well as protection for the algae and yeasts. The algae produce food for the fungi and yeasts via photosynthesis. The yeasts are thought to produce compounds to fend off disease-causing organisms and insect pests.



There are many types of lichens. Crustose lichens (left) are crust-like and adhere tightly to the surface upon which they grow. Foliose lichens (right) are leaf-like and composed of flat sheets of tissue that are not tightly bound.

**What do lichens look like?** Lichens come in four basic growth forms. **Crustose** lichens are crust-like and adhere tightly to the surface upon which they grow. **Foliose** lichens are leaf-like and composed of flat sheets of tissue that are not tightly bound together. **Squamulose** lichens are composed of scale-like parts. **Fruticose** lichens are composed of free-standing branching tubes.

**Where do lichens come from?** Lichens are everywhere. There are an estimated 13,500 to 17,000 species of lichens, and lichens can be found growing in tropical, temperate and polar regions throughout the world. Lichens will grow on almost any surface that is stable and reasonably well-lit. In temperate regions, lichens can often be found growing on the bark of trees or old fence posts. Others lichens grow in less hospitable places, such as bare rock surfaces or old headstones in graveyards, where they aid in the breakdown of rocks and the formation of soil.



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**How do I save a tree with lichens?** DO NOT PANIC! Lichens do not harm trees; they are not pathogens or parasites, and do not cause disease. Lichens are self-reliant, with the algal component of the lichen producing food for the organism via photosynthesis. Lichens absorb water and minerals from rainwater and the atmosphere, and because of this, they are extremely



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sensitive to air pollution. As a result, the presence or absence of certain lichen species can be used as an indicator of levels of atmospheric pollutants. Information on the abundance and species of lichens growing in an area can give a good indication of the local air quality.

**For more information on lichens:** Contact the University of Wisconsin Plant Disease Diagnostics Clinic (PDDC) at (608) 262-2863 or [pddc@wisc.edu](mailto:pddc@wisc.edu).

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A complete inventory of UW Plant Disease Facts is available at the University of Wisconsin-Madison Plant Disease Diagnostics Clinic website: <https://pddc.wisc.edu>.

Submit additional lawn, landscape, and gardening questions at <https://hort.extension.wisc.edu/ask-a-gardening-question/>.