

# Novel plant pathogen discovered on world's northernmost island

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A novel pathogenic fungus causing leaf spot disease in Arctic plants was reported on Ellesmere Island. Although there are a few reports on plant pathogens in Arctic ecosystems, this study showed that even in the Arctic, the regional location and the host species-level differences drive pathogenic diversity. Credit: University of Tsukuba

Ellesmere Island (76°N–83°N) is one of the northernmost islands in the

world, along with Greenland and Spitsbergen Island. More than 100 species of vascular plants are distributed across this island in the ice-free areas in summer. However, there has been little research on fungal diseases in these plants.

In this new study published in *Forest Pathology*, a researcher at the University of Tsukuba discovered a pathogenic fungus that forms a unique black stroma (reproductive organs of fungi, such as mushrooms) on the leaves of the Arctic willow, which is a dominant plant on the island.

The morphological characteristics of fungus were different from those of any [related species](#) discovered as yet in terms of the key points for species identification, namely, the size of the spores and shape of stroma. Molecular phylogenetic analysis also supports the uniqueness of this specimen, and it has been described as a novel species of fungus of the genus *Rhytisma*.

This study has shown that even in the Arctic, the regional location and the host species–level differences drive the diversity of the pathogens. Further data on *Rhytisma* spp. from other regions in the Arctic will help researchers understand how they spread across the Arctic region with their hosts and how they survived in the tundra ecosystem.

**More information:** Shota Masumoto, The northernmost plant pathogenic fungus, *Rhytisma arcticum* sp. nov.: Morphological and molecular characterization of a novel species from Ellesmere Island, Canada, *Forest Pathology* (2023). [DOI: 10.1111/efp.12818](https://doi.org/10.1111/efp.12818)

Provided by University of Tsukuba

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