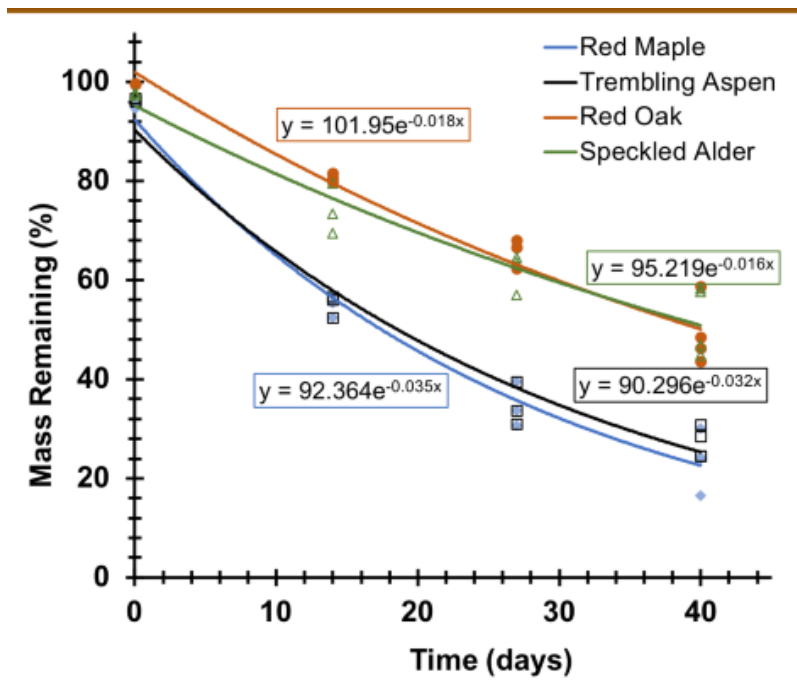
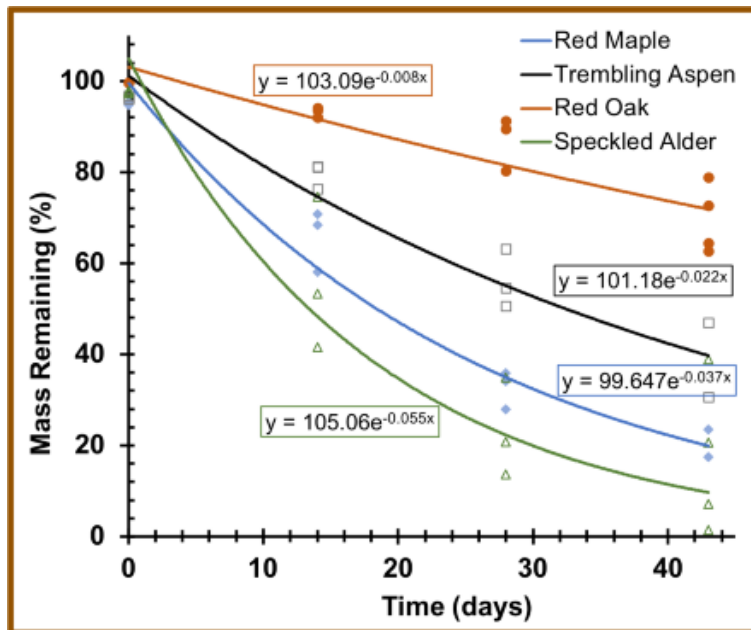


Molecular and Morphological Identification of Aquatic Hyphomycete Fungi in Woodland Streams of Nova Scotia

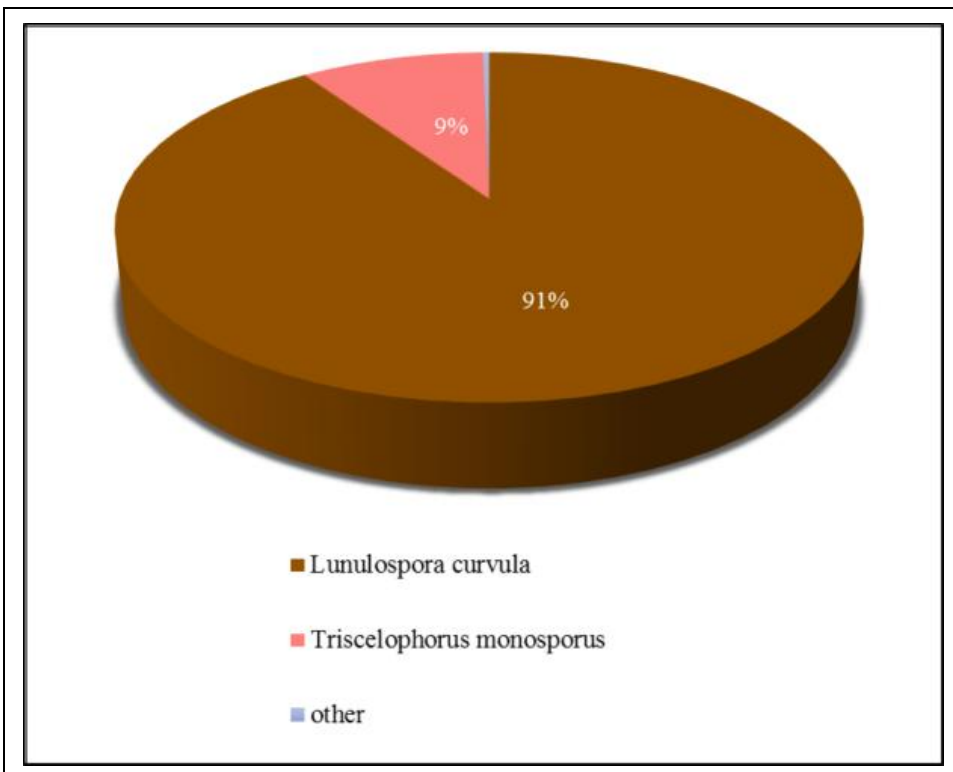
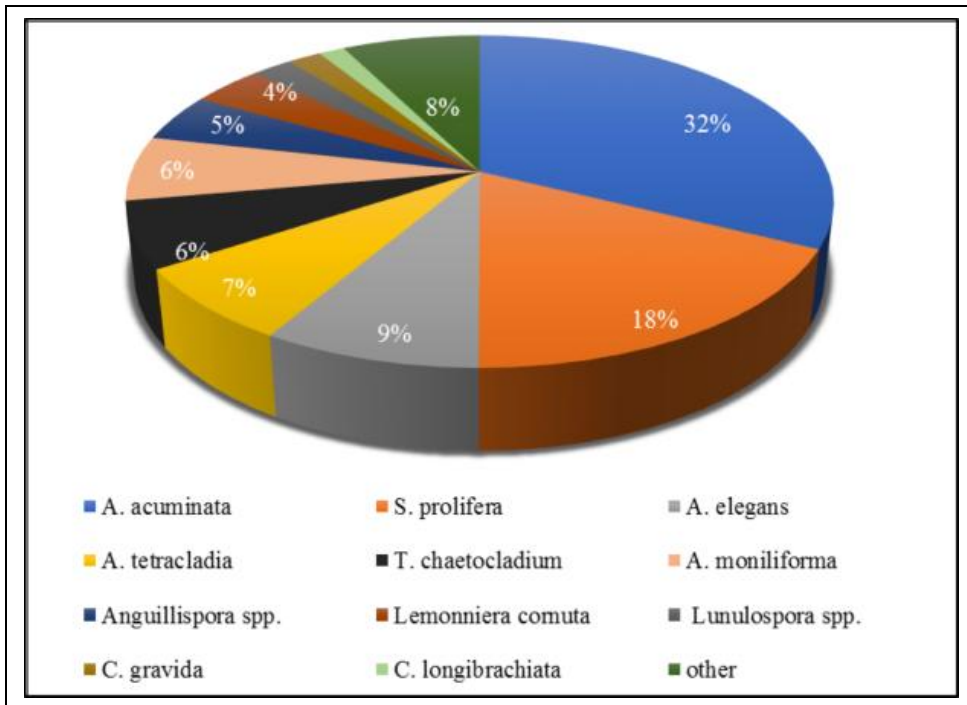
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Aquatic hyphomycetes, or Ingoldian fungi, are a diverse group of fungi found only in aquatic environments. They play a vital role in the recycling of nutrients and energy turnover from dead plant material in aerated, woodland streams all over the world. Species identifications of these aquatic fungi has historically used microscopic characteristics of their spores, but a growing body of research supports species identification based on DNA. The objectives of this study was to obtain accurate estimates of fungal populations, their production, and their effect on leaf litter decomposition in streams of northern Nova Scotia, Canada. This project completed a survey of the regional pool of aquatic fungi in Antigonish and Guysborough counties using both the microscopic and genetic methods. This information shows that the efficacy of the standard method of microscopic spore counting can be augmented with genetic identification, but methods for extracting and isolating fungal DNA are incompletely developed. Finally this project attempts to relate fungal abundance and community structure to leaf litter type, decay stage, stream characteristics, and temperature.



Decomposition rates of leaf litter in Brierly Brook (top) a clearwater stream, and Porter River (bottom) a brownwater stream, spring 2018



Aquatic hyphomycete fungi identified on leaf litter from Brierly Brook (top) and Porter River (bottom) based on spore morphology.