

## Abstract

Nivicolous slime moulds (Myxomycetes) are a relatively understudied group of organisms belonging to Amoebozoa, which have adapted to melting snow environment. These species form fruiting bodies behind melting snowbanks on sites with long-lasting snow cover. Nivicolous myxomycetes have adapted to extreme environments associated with low temperatures and high humidity. They show the ability to survive and reproduce rapidly even in this relatively unstable environment. Based on available data, it is clear that nivicolous species are globally widespread montane element, although their detailed distribution patterns are not yet fully known. About 100 species have been described so far, but many of them appear to be species complexes of cryptic species. The occurrence of nivicolous myxomycetes is conditioned by three factors: the timing of the snow cover, the stability of the snow cover and its sufficient strength as protection against frost. Although they are mostly found at altitudes between 1500–2500 m a. s. l., these species are being found in lowland areas as well. This work focuses on their phylogenetic position and diversity, the conditions affecting their occurrence, special adaptations and ecological significance. The work emphasizes their importance as a soil component and highlights the need for further studies for a better understanding of their diversity, distribution and importance on ecosystem level.

**Keywords:** nivicolous myxomycetes, Myxomycetes, ecology, diversity, distribution, mountain environment, snow