

Unit 6: Myxomyota

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Myxomycetes (cont--)

- Occurrence
- Economic Importance

Occurrence of Myxomycetes:

- Slime molds prefer mostly cool, shady and moist places for their growth and are found in almost all kinds of environment i.e. Tropical and subtropical forests, grasslands, temperate regions, in alpine zones near melting snow peaks and even in deserts.
- The Myxomycetes can be found in moist dead wood, rotting logs, damp soil, leaf litter under trees or shrubs, bark of trees, decaying fleshy fungi, or other organic matter.
- Temperature and moisture are the main important factors for the growth and distribution of slime molds.
- The rainy season seems to be the most favoured period for their appearance like fungi and they continue to sporulate till december. However some species are abundant in spring, summers and in winters.
- Corticolous Myxomycetes occur on bark surfaces of living trees and wines.
- Certain species of *Stemonitis* can be found on rotting lumbar in houses, decks and fences.
- Slime molds feed on bacteria, protozoa, other minute organisms and occasionally they can be seen creeping over plant parts in the gardens e.g. in spring *Physarum polycephalum* and *P. cinerarium* have been reported forming colonies of several feet in diameter in city lawns.



Physarum polycephalum, creeping on wooden log.



Stemonitis spp. growing on wood .

- **Snow bank Myxomycetes:** Myxomycetes associated with snow banks occur during late spring and early summers in alpine regions of temperate zone. These species inhabiting snow banks are *Lamproderma* and *Lepidoderma*.



**Snow bank myxomycete
(Fruiting bodies of *Lepidoderma* spp.)**



Aethalia of *Enteridium lycoperdon* and *Fuligo septica*

Economic Importance of Myxomycetes

Plasmodium and fruiting bodies (sporophores):

- The colourful plasmodium and fruiting bodies of slime molds being beautiful and delicate, have attracted the photographers and artists to exhibit them in the form of paintings, sceneries and photographs. e.g. the yellow coloured plasmodium of *Physarum polycephalum*.
- Slime molds in general have little direct economic importance but they have been the subject of intensive laboratory studies. They have been used by biochemists, molecular biologists and mycologists.
- They are of ecological importance in the food web as food for insects. They contribute to the carbon and nitrogen cycles by using various organic matter including bacteria as food. They have a role in bioremediation. e.g. *Fuligo septica*.
- Their use as food to humans also has been observed in some part of the world. The young fruiting bodies of *Enteridium lycoperdon* and *Fuligo septica* are eaten in Mexico.
- The protoplasm of myxomycetes has been used as an ideal experimental tool in scientific research to solve variety of fundamental problems of biochemists, molecular biologists biophysicists, mycologists and even the geneticists, i.e. mitotic cycle, morphogenesis, physiology, the structure and movement of protoplasm etc.
- The axenic cultures of slime molds such as *Physarum polycephalum* are also used in cell and molecular biology. They have also been used in the Russian and American space programmes.
- Various novel compounds have been isolated from fruiting bodies and plasmodia of myxomycete species, e.g. a new drug 'Polycefin' developed from plasmodial stage of *Physarum polycephalum*, for use in cancer treatment.

For further details on this topic refer book:

Sethi, I.K. and Walia, S.K. (2018). *Text book of Fungi and Their Allies*. (2nd Edition), Medtech Publishers, Delhi (Chapter #5)