

Abstract

This paper summarizes the knowledge on seasonal dynamics of selected genera of Zygnematophyceae. During the year, organisms are exposed to different conditions, especially in winter they have to withstand increased stress. The seasonal changes of conditions is reflected by species composition, total algal biomass and occurrence of different life cycle stages. This work focuses on the mechanisms that different species of Zygnematophyceae use to survive cold and frost stresses. These mechanisms include the formation of specialized cells - zygospores, survival in modified vegetative stages and avoidance strategies. Their occurrence varies with latitude and altitude. The seasonality of individual species may play a role in biomonitoring.

Keywords: biomonitoring, pre-akinetes, seasonality, stress adaptation, Zygnematophyceae, zygospore