CAN ARBUSCULAR MYCORRHIZAL FUNGI FACILITATE PLANT INVASIONS ?

Summary

Plant invasions are thought to be one of the most important factors threatening biodiversity on a global scale and also a serious economical and health problem. They are an outcome of interplay between biotic and abiotic factors. Elucidation of all the factors that mediate invasions is therefore of paramount significance in formulating effective strategies for their management. Like most native plants, the performance of many invasive plants may depend upon associations with symbiotic soil microbes such as arbuscular mycorrhizal fungi (AMF; Glomeromycota). Some invasive plants have been reported to be mycorrhiza-dependent and drive mycorrhizal associations to their own benefit in the invaded ecosystem, while others have been shown less responsive to AMF. While AMF have an impact on invasive plants, such plants may also in turn influence AMF community structure and functions in the invaded habitats. Some invasive species stimulate proliferation of AMF in soils due to root exudates that activate AMF. On the contrary, those the invasion of plants with low mycorrhizal dependency or that are non-mycorrhizal may lower AMF diversity and the abundance of propagules in soils, which may be detrimental to the performance of native mycorrhiza-dependent plants. The studies on AMF – invasive plant interactions not only broaden the knowledge of ecology of invasive plant species but may also contribute to conservation projects for habitat restoration after invasions through AMF-based soil management.