

Abstract:

Invasive plants represent an important topic of study in current ecology because of their effects on whole ecosystems. The plants interact with the soil including soil biota, with the other plants in the community and with other organisms, eg. herbivores. Invasive plants often differ from non- invasive plants in nutrient utilization and can thus affect soil pH as well. They may also differ in the way they interact with mycorrhizal fungi that help the plants with nutrient uptake.

In this study, the effect of invasive and native plants on soil properties is compared. Congeneric pairs of species, where one species is native and the other invasive, are compared. The native species are chosen so that they are dominant and therefore comparable to the invasive plants in the new environment. The evaluated soil properties are pH value and content of elemental nutrients from abiotic properties, and the amount of mycorrhizal fungi propagules and their spreading rate in soil from the biotic properties.

In this study, the invasive and native plants differ only in the content of exchangeable phosphorus and potassium. Content of these two nutrients and one of the indicators of mycorrhizal fungi differ within the pairs of species as well. For most soil properties, the genus of the plant plays the main role, not the invasive status. The chosen invasive and native groups of plants do not differ much in their effect on soil properties and the main factor is the genus of the plants. In the effect on the soil, the properties common in the whole genus of chosen plants regardless of species or invasive status are important. It is possible that closely related species of plants use different mechanisms in spreading in new environment and they affect the soil by different factors than the ones that have been studied in this thesis. Especially soil pathogens would deserve to be studied as well.

Key words: invasive plants, native plants, mycorrhizal symbiosis, pH, soil properties, nutrients