Abstract

The mycorrhizal symbiotic association is a worldwide phenomenon. In most cases, it is a mutually beneficial coexistence of a fungus and a plant in which the plant receives mineral nutrients from the mycorrhizal fungus (mainly nitrogen, phosphorus, and water), while the fungus takes carbohydrates from the plant. In some cases, the transfer of nutrients may occur in the opposite direction, and the plant can even use the mycorrhizal fungus one-directionally. However, there are still gaps in the understanding of the importance and principles of carbohydrate transfer in mycorrhiza. Recent findings summarized in this thesis show that the carbohydrates that occur in mycorrhizal association include mainly sucrose, glucose, fructose, and trehalose. Their transfer takes place either passively, based on concentration gradient, or actively, using different plant and fungal carriers. At the same time, the transfer and the use of carbohydrates vary in different types of mycorrhizal associations.

Key words: ectomycorrhiza, arbuscular mycorrhiza, ericoid mycorrhiza, orchid mycorrhiza, saccharides, transfer, transporters