

Many adverse factors affect plants during their life cycle. This bachelor thesis is focused on the influence of abiotic stress on plants. Attention is paid to drought and salinity stresses which are the main causes of osmotic stress, and to the mechanisms which help plants to cope with these adverse factors. Common reaction of plants to osmotic stress is synthesis and accumulation of substances which contribute to keeping cell integrity. These substances are called compatible solutes. This thesis is focused on sorbitol - sugar alcohol belonging to this group of substances. In plants that synthesize sorbitol naturally, it provides advantage under exposure to abiotic stresses as it serves as an osmoticum and/or an osmoprotectant and reduces oxidative stresses. Finally, based on the knowledge about participation of sugar alcohols in the stress reactions, modifications of plant metabolisms potentially increasing stress tolerance are discussed.