Determination of the impact fluctuating light of fluctuations in light intensity on the photosynthetic activity of selected plants under conditions of varied soil water availability.

The natural conditions of plant growth are characterized by a significant variation in the intensity of light. Such conditions reduce crop productivity due to delays in the response of the photosynthetic system to changes in light intensity. Understanding the processes that regulate photosynthesis under light fluctuating conditions is important to increase the productivity of crops. The effectiveness of known mechanisms of Energy dissipation may be limited by other abiotic stresses, such as e.g. soil drought.

It is planned to analyse various mechanisms of light energy dissipation in conditions of varying light intensity. The studies will be conducted on be model plants with known limitations in the dissipation of light energy as well as crops growing in conditions of optimal and limited availability of soil water.

The obtained results will allow to determine the contribution of individual mechanisms of dissipation of excessive light energy in the processes of adaptation of plants to growth at conditions of variable lighting intensity.

It is predicted that the results can be useful to increase the accuracy of plant growth models, and to indicate possible research directions for improving the productivity of crops.