

DESCRIPTION FOR THE GENERAL PUBLIC

In the nature, variation of plant traits within species is observed. This variation is the result of various mechanisms, in particular of the action and interplay of plant hormones (phytohormones) that regulate physiological processes. One of the most important phytohormones is gibberellin (gibberellic acid), which influences, among other traits, the plant architecture, and through this yield. Investigations on gibberellin synthesis and on the phenomena that depend on gibberellin level can significantly extend the knowledge about shaping of important traits of plants, including crop plants like cereals. Material for the studies will consist of barley forms carrying different variants of genes controlling production of gibberellin. Observations will be done on plants cultivated in normal conditions and in increased temperature - a stress influencing the reaction of plants occurring frequently in the nature. The system of proteins and genes engaged in synthesis and utilization of gibberellin in plant will be studied with the application of the state-of-the-art molecular biology techniques utilizing next-generation DNA sequencing. The obtained knowledge will be used in the future for improvement of crop plants.