Leibniz-Institut für Pflanzenbiochemie

Leibniz-Gemeinschaft

IPB Seminar Series in
Plant Biochemistry

Functional genomics and gene editing for abiotic stress resilience in crops

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Kurt Mothes Hall, Leibniz Institute of Plant Biochemistry

Rice is a staple food for more than 3.5 billion people around the world, particularly in Asia, Latin America, and parts of Africa. Global climate change and massive urbanization, have raised challenges for agricultural productivity and food security. Global warming increases abiotic stresses on rice, which can lead to a decline in rice production and grain quality. In this situation, the adoption of advanced technology and high-throughput omics platforms have become the choice to prepare climate-smart crops. Functional genomics is one of the most promising post-genomic sciences that address such biological questions that arise from environmental stress. Our group works on major abiotic stresses like drought, Soil acidity, Fe excess etc. as experienced in the rice agro- ecosystems of north-eastern India and globally. Using a natural genetic variation and transcriptomic intervention of global gene expression and regulatory network of rice under such stresses have been studied. Besides many molecular events responsible for tolerance mechanism in rice with critical genes have been identified which pose beneficial for translational agriculture via new breeding technologies.

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