
Title: Emerging Biotechnology Projections for Plant-Climate Change Interactions



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Proposal

Seasonal rain capacity has been visibly shifted in the last few decades for most of the territories including arable lands. In addition, increasing average temperatures and sharply changing humidity conditions adversely affect many plant processes from seed germination to plant development. These unbalanced environmental conditions cause drought-prone areas or saturate lands with excessive water called as flooding. Significantly, heat, cold and freezing are other stressors as a result of unexpected temperature fluctuations. On the other side, biotic factors, either caused by one or multiple source of pathogens such as fungi, bacteria, virus based, are known as hazardous as abiotic stresses for crops. Separately, abiotic and biotic factors sometimes accompanied to each other or subsequently trigger another stress and cause yield loss especially for the important agricultural products. In order to provide adapted plants against to these severe conditions, biotechnological tools potentially serve practical solutions with enhanced production for staple crops. In addition to the conventional crop improvement approaches, today, molecular biology combined with next generation platforms presents resistant genotypes which can be used to combat with extreme environmental conditions. For example, while sequencing provides convenience for large scale deep screening of genome/ transcriptome regions which were correlated to important traits of interest like drought tolerance or fungi resistance for selected genotype etc., morpho-physiological selection via the phenomic applications can help to extract the unwanted genotypic characters without intervention. Hence, valuable clues for further crop improvement can be obtained directly or indirectly and shorten the time of cultivation processes. In this special issue, studies related to recent biotechnology applications used for feasible crop improvement are invited to submit for the special issue "Emerging biotechnology projections for plant-climate change interactions".

The priority will be given to the following topics but other close issues are also welcome.

- Abiotic stress tolerant plant selection
 - Omis for biotic stress resistance
 - Phenotyping for stress tolerant crops
 - Novel biotechnological applications for plant screening
 - Seeds and stress response
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