From Traits to Targets: Building Tools to Identify Gene Editing Candidates in Crops

Crop improvement through biotechnology requires the introduction of specific genetic changes. In an industrial crop improvement program, the candidate genes and modifications tested are hypothesized to confer a desirable phenotype. While there are multiple techniques for identifying candidate genes for transgenic manipulation, the fast rise of genome editing technologies necessitates more detailed knowledge of the impact of crop genes on phenotypes. The linkage of trait phenotypes to genes within the target crop becomes essential for the full realization of the potential of genome editing. Here, the creation of a genetic population useful for linking specific phenotypes to genes will be described, along with proof of concept data that highlights the utility of this population.