Climate change ready crops? Gene editing and other genomic advances show promise

Development of climate resilient crops with accelerating genetic gains in crops will require integration of different disciplines/technologies, to see the impact in the farmer's field.

…

Pre-breeding and genomics-assisted breeding approaches are contributing to the more efficient development of climate-resilient crops. It is anticipated that the integration of several disciplines/technologies will result in the delivery of climate change ready crops in less time.

…

Genome editing (GE) is a method that enables specific nucleotides in the genome of an individual to be changed. GE seems to be one of the promising approaches that could be conveniently exploited to generate homozygous mutants for multiple target genes in a single generation. This implies that new varieties could be developed much faster than usual traditional or even molecular breeding methods. In addition, GE technology is also very useful for generating targeted variations, thereby broadening the allele pool for precision breeding. Most importantly, the resultant product of genome editing, as per the scientific community, is not a genetically modified organism (GMO). Therefore, the GE approach, although superior and much more precise than genetic engineering, is likely not to face regulatory and public acceptance.

…

Next generation breeding approaches including GS [Genomic selection] and GE can use the new germplasm and technological advances to develop climate change ready lines.

Read full, original post: Can genomics deliver climate-change ready crops?