THE CURRENT STATUS OF GENOME EDITING TECHNOLOGY (CRISPR/Cas9) FOR IMPROVING TRAITS IN RICE AND PERSPECTIVE IN VIET NAM

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Summary

Development of mutation crops by genentic edition is conventional and an extremely flexibile tool for sustainable agricultural production. Whereas, genome editing (GE) has been modified at the molecular as the nucleotide and ensured by specificity of CRISPR/Cas9. This technique is more quick, simple, and high efficiency than ZFNs and TALENs. Various plant-specific CRISPR/Cas9 vector systems have been estabilished for adaptation of this technology to many plant species and successfully applied to model plant as *Arabidopsis thaliana* and other important crops such as soybean and corn. With this potential powerful and innovative technique, the GE plant breeders make valuale materials for mutation breeding. In this review, we summarize the role of CRISPR/Cas9 in plant genome editing and current achivements as well as the potential application for rice genetic improvement related to productivity, quality, and tolerant ability to adverse environmental conditions.

Keywords: *CRISPR/Cas9, mutants, GMO, rice, stress.*