

# A systematic map about the available evidence for the application of genome editing in plants

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In order to address **Ethical, Legal and Socio-economic Aspects of Genome Editing in Agriculture** the **ELSA-GEA** project was established to support an informed public debate and provide science-based input for decision-makers in politics, economics, science and society.

Plant breeding is a developing process and new breeding methods have continuously evolved over time. Within the last decades, genome editing techniques such as Clustered Regularly Interspaced Short Palindromic Repeats/CRISPR associated proteins (CRISPR/Cas), Transcription Activator-Like Effector Nucleases (TALENs), Zinc-Finger Nucleases (ZFN), Meganucleases (MN) and Oligonucleotide-Directed Mutagenesis (ODM) have been developed enabling a precise modification of DNA sequences in plant species like rice, maize, soybean, tomato and many others.

In order to provide a comprehensive overview about the fast growing available evidence for the application of genome editing in plants a systematic map has been conducted. A systematic map is based on a broad review question aiming to identify, collect and evaluate the available academic and grey literature in a systematic and transparent manner. The detailed determination and documentation of the data collection allows a consistent updating and supplementing of the existing literature.

First results of the map identified many market-oriented developments of genome editing, including improved agronomic characteristics, improved food and feed quality, increased tolerance to abiotic and biotic stress and herbicide tolerance.