



Effects of Radiation on Plants

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Message from the Guest Editors

With the discovery of ionizing radiations as physical mutagens, mutation research appeared as a new field in plant science. These mutagens may cause genetic variations such as DNA single- or double strand breakage and chromosomal aberrations in plants. These changes caused by radiation may be repaired by machinery such as a nucleotide excision repair (NER) and homologous recombination (HR). Despite this, some of the damaged nucleotides cannot be repaired or may be repaired incorrectly.

Ionizing radiations are most commonly used to generate useful mutations in plants, owing to their ease of application and high mutation frequency. The effects on living organisms from a form of ionizing radiation, including mutation rate, cytogenetic effects and biological responses, have been reported in many plant species. An understanding of genetic variations, including physiological and morphological changes by radiation, is essential not only for the characterization of mutations, but also for the application of a mutational technique for plant breeding and molecular genetics. Through this Issue, we will deeply review the related topics and share novel plant effects caused by radiation.





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Message from the Editor-in-Chief

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