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Review on the impact of cell phone radiation effects on green plants

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Abstract

The aim of this review is to assess the impact of cell phone radiation effects on green plants. Rapid progress in networking and communication systems has introduced frequency- and amplitude-modulated technologies to the world with higher allowed bands and greater speed by using high-powered radio generators, which facilitate high definition connectivity, rapid transfer of larger data files, and quick multiple accesses. These cause frequent exposure of cellular radiation to the biological world from a number of sources. Key factors like a range of frequencies, time durations, power densities, and electric fields were found to have differential impacts on the growth and development of green plants. As far as the effects on green plants are concerned in this review, alterations in their morphological characteristics like overall growth, canopy density, and pigmentation to physiological variations like chlorophyll fluorescence and change in membrane potential etc. have been found to be affected by cellular radiation. On the other hand, elevated oxidative status of the cell, macromolecular damage, and lipid peroxidation have been found frequently. On the chromosomal level, micronuclei formation, spindle detachments, and increased mitotic indexes etc. have been noticed. Transcription factors were found to be overexpressed in many cases due to the cellular radiation impact, which shows effects at the molecular level.

Keywords: Electromagnetic field; Enzyme activity; Radio waves; Reactive oxygen species; Specific absorption rate; Transcription factors.

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