Radiation from Telecom Devices: Impact on Life and Combating Threats

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Recent concerns on potential harmful effects of non-ionizing or radio frequency electromagnetic frequency (EMF) emissions from wireless communication devices, creates the need to (a) verify the extent of potential impact to living species on earth (b) identify thresholds that overcome such dangers, if any, and (c) recommend practical ways that balance the need for using mobile devices for improved productivity vs safe guarding long term health. This project uncovered the effect of such radiation on two species of plants (Vigna radiate (Mung), Cicer arietinum (Chick peas)) and on Drosophila melanogaster (Fruit flies). Dosage sources included common cell phones, land lines, wireless routers and microwaves, whose emissions span the radio wave spectrum. Exposure conditions were commonly used practices (for example texting, conversing, watching videos) which are within current ICNIRP guidelines that regulate the safety limits of such devices. Through carefully controlled experiments that included 5 replicates for each dosage / source combination and statistical analysis (ANOVA), results show >70% retardation of growth of the two plant species that were exposed to two or higher hours of radiation. Electrical conductivity measurements on the exposed roots of the seeds show possible relation to ion leakage indicating likely cell disruption due to the radiation. Three to four hours of exposure to wireless routers, reduced the reproductive ability (pupae formed per fly) of fruit flies by 38 – 58%.

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