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Mobile radiation stunts crop growth

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Mobile phones may have become ubiquitous in rural areas and popular among farmers. But electromagnetic radiation emanating from them may be stunting the growth of agricultural crops and plants, preliminary research has revealed.

Studies carried out at Panjab University, Chandigarh, suggest that electromagnetic field (EMF) radiation from cell phones could choke seeds, affect germination and early growth. This is said to be the first such study on the impact of EMF radiation on seeds.

Though different groups of scientists have been studying the effect of mobile radiation on human beings, there has been no conclusive outcome yet. But Panjab University scientists have found definite clues on the ill-effects of electromagnetic radiation on crops and plants.

Their research results are to be announced in an international scientific journal soon.

The researchers germinated moong dal (*Phaseolus aureus*) seeds in a closed chamber in which two cell phones were kept on talk mode.

The results were surprising - they indicated that the radiation emitted from the cell phones inhibited germination and early growth of the pulse. The germination of the seeds exposed to two and four hours of cell phone radiation reduced by 18 and 30 per cent respectively, compared to seeds that were not exposed to any radiation.

Likewise, root and shoot lengths also showed a significant reduction in the seedlings emerging from cell phone-exposed seeds. The inhibitory effect of the electromagnetic radiation was greater on root growth than on shoot growth. The researchers found similar stunted growth for wheat seeds as well, in earlier studies.

"Our study has shown that cell phone radiation inhibited root growth by affecting respiration of the root and excessive leakage of ions (charged particles)," said Ravinder Kumar Kohli of the botany department of the university. He is one of the authors of the upcoming research paper. "The observed reduction in germination and early growth of moong upon exposure to cell phone radiation is being reported for the first time." Radiation increases ion leakage and ultimately causes breakage of cell membranes, the scientists explained. It causes certain oxidative stress, which naturally occurring anti-oxidant enzymes could not protect.

This study, researchers said, was important in view of the rapid increase in cell phone radiation in the natural environment and its possible impact on ecosystem processes and environmental health. It implied a need for environmental risk assessment caused by electromagnetic radiation from phones and cell phone towers, so that strategies can be devised to check electromagnetic pollution in the natural environment.

"Larger field studies are needed to further quantify the impact," Kohli said.

Ved Prakash Sharma, another member of the team, is finding radiation's dramatic impact on chicken eggs too.

Studies in Kerala also exposed the impact of cell phone radiation on honeybees and house sparrows.

Researchers said the state saw about 60 per cent plunge in commercial bee population.

Besides, house sparrows had vanished from the state. This was attributed to the electromagnetic radiation from mobile towers.

A study by the Kerala Environment Research Association (KERA), an NGO, said the eggs of sparrows nesting on mobile phone towers failed to hatch even after a month, though their normal incubation period ranged from 10 days to a fortnight.

"The mobile communication towers emit electromagnetic waves of a very low frequency of 900 or 1,800 MHz. But this is enough to harm the thin skull of the chicks and their egg shells," said KERA president Dr Sainudeen Pattazhy.

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