

## DNA of Hibiscus sabdariffa Damaged by Radiation from 900 MHz GSM Antenna

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**Abstract :** The technology of mobile telephony has positively enhanced human life and reports on the bio safety of the radiation from their antennae have been contradictory, leading to serious litigations and violent protests by residents in several parts of the world. The crave for more information, as requested by WHO in order to resolve this issue, formed the basis for this study on the effect of the radiation from 900 MHz GSM antenna on the DNA of *Hibiscus sabdariffa*. Seeds of *H. sabdariffa* were raised in pots placed in three replicates at 100, 200, 300 and 400 metres from the GSM antennae in three selected test locations and a control where there was no GSM signal. Temperature ( $^{\circ}\text{C}$ ) and the relative humidity (%) of study sites were measured for the period of study (24 weeks). Fresh young leaves were harvested from each plant at two, eight and twenty-four weeks after sowing and the DNA extracts were subjected to RAPD-PCR analyses. There were no significant differences between the weather conditions (temperature and relative humidity) in all the study locations. However, significant differences were observed in the intensities of radiations between the control (less than 0.02 V/m) and the test (0.40-1.01 V/m) locations. Data obtained showed that DNA of samples exposed to rays from GSM antenna had various levels of distortions, estimated at 91.67%. Distortions occurred in 58.33% of the samples between 2-8 weeks of exposure while 33.33% of the samples were distorted between 8-24 weeks exposure. Approximately 8.33% of the samples did not show distortions in DNA while 33.33% of the samples had their DNA damaged twice, both at 8 and at 24 weeks of exposure. The study showed that radiation from the 900 MHz GSM antenna is potent enough to cause distortions to DNA of *H. sabdariffa* even within 2-8 weeks of exposure. DNA damage was also independent of the distance from the antenna. These observations would qualify emissions from GSM mast as environmental hazard to the existence of plant biodiversities and all life forms in general. These results will trigger efforts to prevent further erosion of plant genetic resources which have been threatening food security and also the risks posed to living organisms, thereby making our environment very safe for our existence while we still continue to enjoy the benefits of the GSM technology.

**Keywords :** damage, DNA, GSM antenna, radiation

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