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Evaluation of Radiation Absorption Capacity of Azadirachta Indica.

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Abstract: ***Today the world is traveling towards the technology. Whenever the technology gets upgraded the reality gets changed along the nature. In this study, the radiation absorption capacity of Azadirachta indica (Neem) plant was evaluated. An android mobile phone was taken and the amount of radiation emitted by the mobile phone has been detected with the help of an electromagnetic radiation detector (GM3120 Electromagnetic radiation tester) in terms of 'µT'. The radiation was detected by placing the radiation detector and mobile phone at distances from 0 mm to 18 mm. As a result of the work, it was found that Azadirachta indica have the radioprotective property and can be used as a solution for the bad effects of radiations***
Keywords: Azadirachta indica (Neem), Mobile phone (android), micro tesla (µT), electromagnetic detector (GM3120), radioprotective .

I. INTRODUCTION

Our world is becoming a victim for various effects of different radiations. Most electric appliances such as laptops, computers, mobile phones etc, emits different radiations which has various bad effects. The commonly emitted radiations are radio waves, microwaves, infrared, visible light, ultraviolet, X-rays and gamma rays which is collectively known as electromagnetic radiations .

Many studies related to the electromagnetic radiations specifies that there are many bad health effects of the electromagnetic radiations (Ali Zamanian and Cy Hardiman).

The adverse effect of electromagnetic radiation can be classified as (i) short term effects (ii) long term effects (iii) Electrical sensitivity. Not only for humans it also affects the wildlife.

The short term effects includes headache, decreased sperm motility (Osman Erogul et.al.,), burning sensations etc. The long term effects includes brain tumours, immune disorders, toasted skin syndrome, fragmented DNA , cancer (Lennart Hardell and Michael Carlberg) e.t.c.

The electrical sensitivity includes concentration or memory loss, sleeping problems, cognitive impairment etc. And also it affects the central nervous system(K-A Hossmann and DM Hermann). Since there are many harmful effects of the electromagnetic radiation. It is necessary to find a proper solution. The best solution to reduce electro- magnetic radiation is to avoid the appliances that produce the radiations. But it is not practical, because most of the people can't even think of a day without the appliances such as laptops, mobile phones etc. It is because some people have to use these appliances, some have to use these as a part of their studies, some have to use these as a part of their enjoyment, and most of them use these appliances for contacting their family members, friends, officials etc.

Therefore, it is not practical to stop using these applications. But many studies shows that, some plants can be used for reducing electromagnetic radiations.

So, it is very important to reduce the effects of radiations emitted from the mobile phone. The best way to reduce this effects are to avoid the mobile phones. But it is impossible in our today's world. Another ways to control the radiations are by using electrical wires for transmitting information's, another way is by using radiation shield etc. These ways are also very difficult to follow. But the nature is having a great solution for that.

There are some plants that absorb the electromagnetic radiations from different electrical appliances such as mobile phones, laptops, desktops etc (AlainVian et.al.,). There are also many works that are related to evaluation of radiation absorption capacity of different plants. One such work is evaluation of radiation absorption characteristics in different parts of some medicinal aromatic plants in the low energy region (F. Akman et.al.,). In this work, they have studied about the capacity of plants for absorbing the radiation from different electrical devices.

Some of the plants that can absorb the electromagnetic radiations are cactus, snake plant, spider plant, betel leaf plant, stone lotus flower, aloe vera, ivy, *Asparagus fern*, mustard greens, rubber plants etc.

So the objective of this work is to evaluate radiation absorption capacity from Azadirachta indica.

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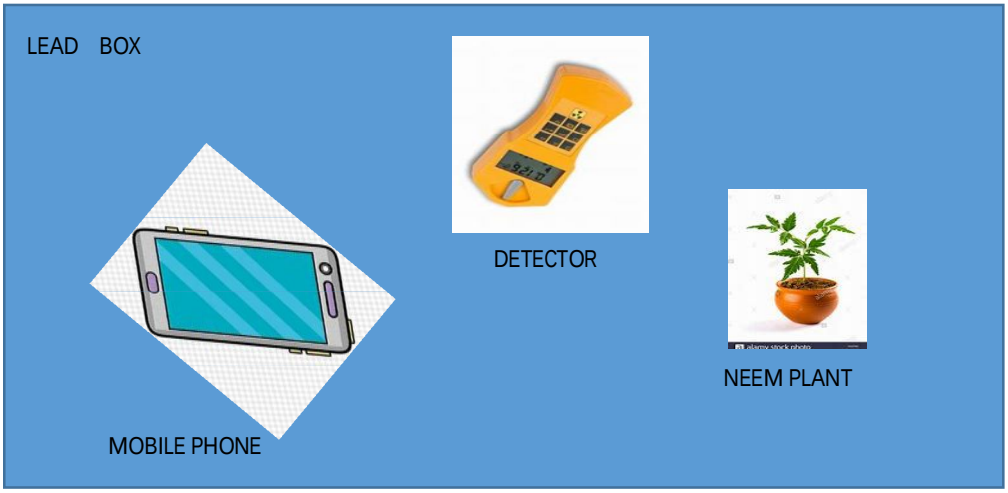
II. MATERIALS AND METHODS

A. Sample Collection

The live plant sapling of Azadirachta indica (Neem) was collected (Saranya K et.al.,) from DNC flowers and plants, Hosur, Tamil Nadu, India. The android mobile phone sample was collected from a volunteer and named as A:1.

B. Experimental Setup

The evaluation of radiation absorption capacity were analysed using GM3120 Electromagnetic radiation detector in terms of µT. The electromagnetic radiation of the mobile phone with and without plugging with electricity were noted using the detector. the plant sample were placed in the environment nearby the mobile phone with and without electricity. The entire closed environment made up of lead were maintained for the entire experiment as shown in the experimental setup figure 1. The distance between the mobile phones and the detector were varied from 0 to 20 mm. similarly, the distance in between the mobile phone, sample and the detector were observed.



III. RESULT AND DISCUSSION

The radiations emitted from the mobile phone when it was plugged to electricity was high when compared to the radiation emitted from the mobile phone when it was not plugged to electricity. It was noted that the radiations became less when Azadirachta indica plant was placed in the closed lead box. Radiation emitted by the android mobile phone a:1 with and without plugging with electricity and reduction of radiation in presence of sample has been detected and shown in the figure 1

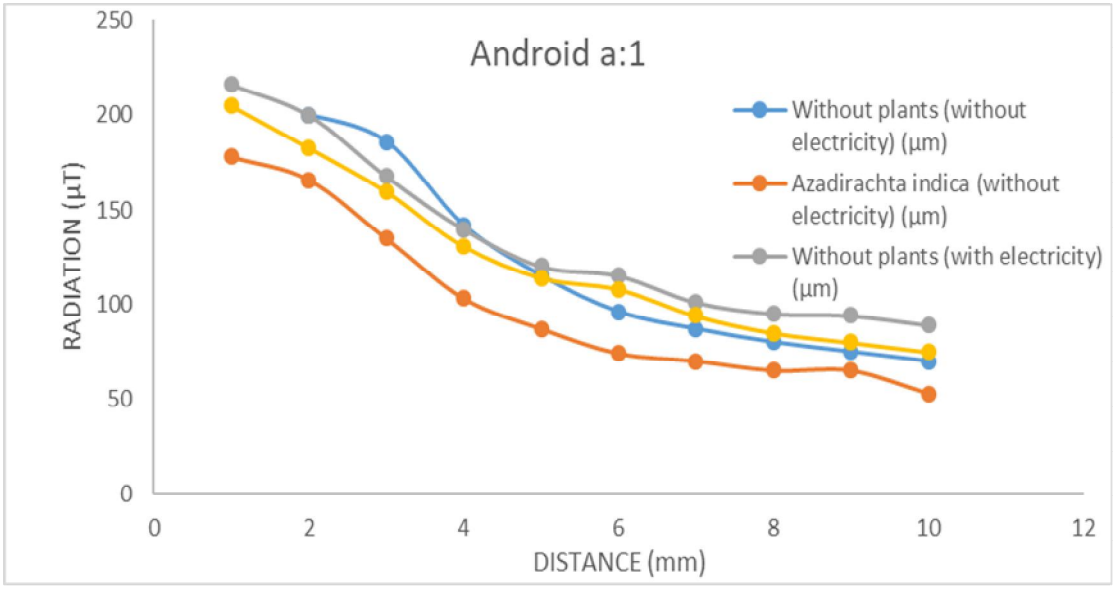


Fig 1: Reduction of radiation

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When the figure 1 was analysed it was clear that Azadirachta indica absorbed the radiations emitted by the mobile phones. The present work it was clear that Azadirachta indica have the capacity to absorb the radiations. The plant had absorbed the radiation because, when the plant was exposed to the electromagnetic radiation, some alterations of enzymatic activities were occurred. When the plant is exposed to radiation, ROS metabolism is activated and this helps the plant to absorb the radiation (Alain Vian et.al., Khogare Balaji T et.al.,).

IV. CONCLUSION

This present work was concluded that Azadirachta indica have the ability to absorb further studies show perform to get the evidence for this study.

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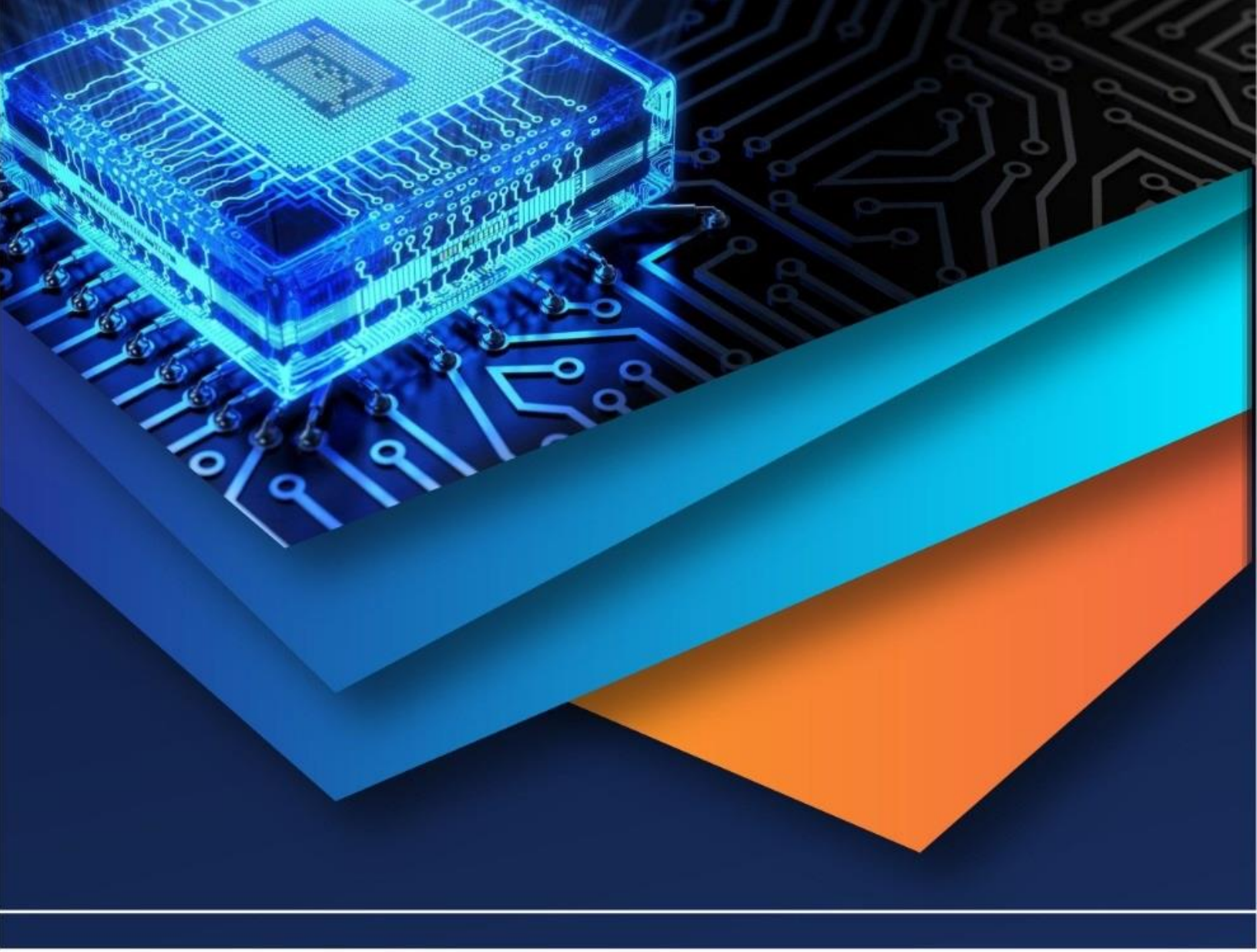

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