

THE EFFECTS OF ELECTROMAGNETIC WAVES ON LIVING ORGANISMS

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Abstract

This paper shows the effects of electromagnetic waves on humans and other living organisms, waves that are being transmitted by instruments or machines which give off electromagnetic radiations during function, especially GSM relays. It contains general information about areas that are strongly radiated like the ones that are near GSM relays, more accurately, information about the Odobesti relay; it also presents summaries and conclusions as a result of passing along surveys in the nearby area of this relay, but also in areas in which it does not exist such a relay, and also interviews with beekeepers.

The purpose of this paper is to highlight the daily impact that electromagnetic waves has on humans and other living organisms, in order to determine the disadvantages of placing these relays in populated areas..

Key words: relay, bees, electromagnetic waves

INTRODUCTION

Explosive growth of electricity users and applications in transmission of electromagnetic media information specific to modern civilization has led to numerous problems related to the exposure biology, the field of environmental influence. The use of the radio frequency electromagnetic radiation is becoming more common. Satellite broadcasting, cellular telephone systems use thermal oven is expanding more and more.

The frequency range of technical applications has extended continuously, from frequencies of order Hz to order GHz, matching wavelengths from 1000 km to 0.1 m. The technical frequency range overlaps the natural spectrum of frequencies more and more every day. We have to retain the fact that any machine, equipment or electrical / electronic system can be at the same time the transmitter or receiver for electromagnetic radiation. This paper's purpose is to show what the consequences are in case a GSM relay is posted at a maximum distance of 300- 500 meters from people's houses and also, the effect of radiations on bee colonies in the area. I have chosen the orange relay from Odobesti, Dambovita County which

is set on a Orange pylon of 50 meters high; this pylon transmitted electromagnetic waves on a distance of 4-5 km. The radiation has, in essence, the same frequency as microwaves of a microwave oven.

MATERIALS AND METHODS



Figure 1. GSM relay Odobesti



Figure 2. GSM relay Odobesti

I took as example the Orange relay Odobesti, located at $\varphi = 44.6055, 25.5583 = \lambda$, H 145, is located on a mast ORG, P50_s structure, equipped with Shelter, with a height of 50 meters.

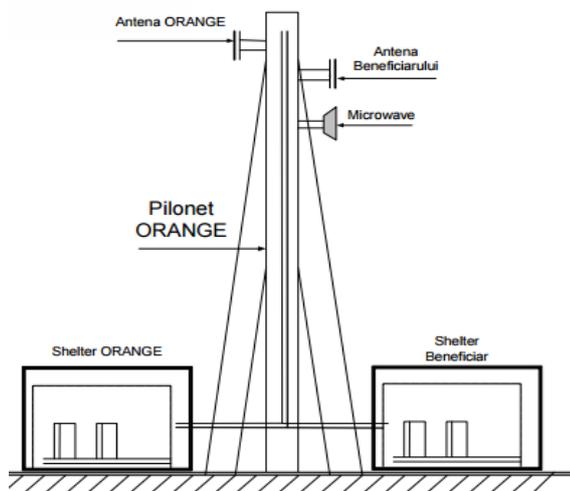


Figure 3. Sketch GSM relay

The Orange relay is situated near a school, a church, vulcanization, a barber shop, 3 stores, the city hall, a pharmacy, a medical centre and people's houses. By distributing surveys, both in an area with no relay and in the nearby of the Orange relay, I have made polls to differentiate the two cases. I interviewed two beekeepers from nearby the Odobesti relay who have been engaging them activity long before the placing of the relay in the area.

RESULTS AND DISCUSSIONS

I have distributed the form in the two areas, with a relay and without a relay. The form includes questions like:

„Name”, „Age”, „Do you live in the nearby area of a GSM relay? (300-500m)”, „How many hours a day do you watch T.V.?”, „Do you use a microwave oven?”, „Are you tired or stressed all the time?”, „Do you suffer from cardiac diseases?”, „Do you suffer from neurological diseases?”, „Do you have cancer?”, „Do you think that placing a GSM relay in your area had negative effects on you or it affected you in any way?”, „Observations (Diseases presented)”.

I have chosen an equal number of people (64 people) with the age between 18 and 84, the average age in the both cases being 48-49. (Figure 4)

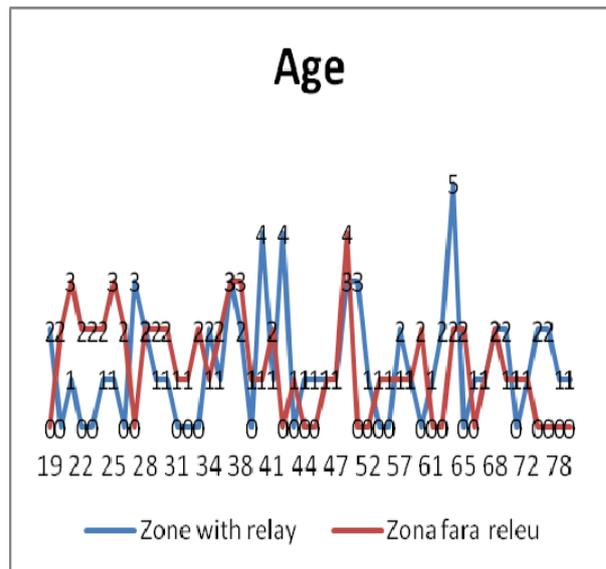


Figure 4.

By asking the question „Do you live in the nearby area of a GSM relay? (300-500m)”, I wanted to know exactly the effects the nearby relay has on the population, therefore the distance I have chosen (300-500 m), but also to differentiate the two areas.

I asked the question „How many hours a day do you watch T.V.?”, and in the two areas the percentage was different.

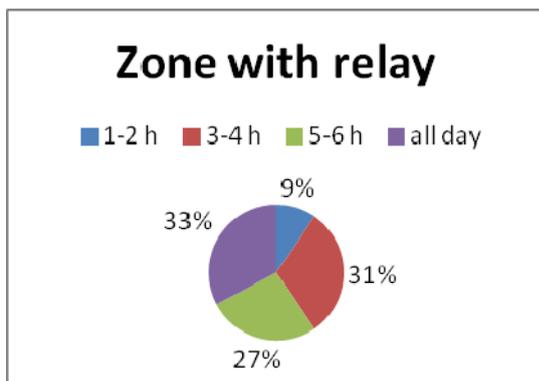


Figure 5

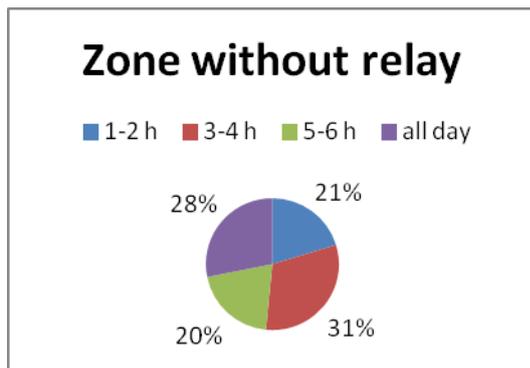


Figure 6

The older T.V.s, the box type, has cathodes tube which transmitters a higher level of radiation.

If you still own this type of TV, the experts recommend being at a distance of at least 2 meters from it, to limit exposure.

At lower levels of this type of radiation there is proof of cellular tissue deterioration and of the DNA, also there radiation have been connected to brain tumours, cancer, lower immunity functions, depression, miscarriage, Alzheimer's disease and numerous other affections. Children are being exposed to a bigger risk due to their thinner skull and the rapid growth rate. Also, at a bigger risk are exposed the older population, those who have a more fragile constitution, and pregnant women. Children under the age of 16 are advised not to use cell phones, to minimize their exposure to radiation. Mobile telephony pylons represent a risk for health, there are numerous cases of epidemiology and medical that confirm the fact that exposure to radiation of the RF domain and microwaves transmitted by the mobile telephony pylons, even at low levels, can have huge adverse effects on biological systems. It can be related to: brain cancer, memory loss, DNA chain damage and neurological problems

due to exposure to levels lower than the limit of the official safety standard. Some adverse effects of radiation can be seen almost immediately, but others are shown after many years of exposure – for example 3-10 years in case of cancer.

Interview with Mr. Nicu Pinte

Mister Pinte Nicu (50 years old) has been a beekeeper for 28 years; he started this with two hives which he multiplied very fast, he says. Within a 10 year period he made it to 120 hives.

In the present, mister Pinte has 258 hives, which he moves periodically in special places near the forest, sun flower fields etc.

He confessed that since the GSM relay appeared near his house it has affected considerably the honey production, and as for the population of bees, in the year 2000 he had 150 hives and lost 75 of them in only one year since the relay was placed. Mister Pinte was forced to move his hives in a further location; therefore he got to move his home in a neighbouring village.

Interview with Mr. Neacsu Mihail

Mister Neacsu Mihail (50 years old) has been a beekeeper from the age of 25, as he inherited from his father 80 hives.

„Before the revolution, my father worked very hard that me and my family to live a good life; I remember that he could keep about 10% of what bees produced. Seeing him all my childhood how hard he worked for these hives I couldn't give them up when he couldn't take care of them anymore.

I have learned pretty fast how to multiply bees and I got to make a good profit over them. In the year 2001 I had about 200 hives, but once the Orange Relay was placed my profit started dropping remarkably, so that in 2002 I was left with 120 hives, the production going from bad to worse and bees started dying more and more. So I started to sell the hives along with the bees. In the present I am no longer a beekeeper, but I can say that I regret very much the fact that I couldn't take my father's work further.”

Bees are sensitive to magnetic fields, for they have in their bodies particles that are called magnetite, and radiation from GSM antennas contribute to the dramatic decrease of the bees population.

Animals, including insects, use for navigation a pigment called cryptogram. Bees use it to feel the direction of the magnetic field of Earth, but they are blocked by the radiation that comes from the terrestrial bases of mobile telephony operators. This is why bees get confused and they don't find their way to the hive.

To fully understand this subject, I can say that regularly, a loss of 10% per season of the bee colonies was considered normal. In cases of an epidemic or pests invasion, it would get to a 30% loss. In case of this syndrome the losses get to about 70% - 80%. At this pace, bees are heading to extinction. The magnetic sense of bees allows them to navigate over the magnetic fields of Earth, ability which needed millions of years to develop and adapt, that is why it is affected by the smallest change in the electromagnetic environment.

The disappearance of all bees on the planet would be a disaster. It could mean the end of mankind. They are responsible for natural polarization which sustains the perpetuation on trees and plants. It has been estimated that for three quarters of plants, that provides man with cereal, vegetables, fruits, seeds, nuts, polarization is vital. The signal from cell phones disorients bees, making them fly chaotically before they die. Experts in beekeeping have put a cell phone under a bee hive, and then they closely monitor their reaction.

The result was that they have shown capable to figure out if the phone calls or receives calls, by answering through a signal which is usually used for gathering the swarm. After the end of each call, at approximately two minutes, the insects have calmed down. This shows clearly that the presence of cell phones disrupts bees, having a dramatic effect over them; cell phones signals are responsible for the graduate disappearance of bees.

CONCLUSIONS

By distributing the surveys I have created this poll:

States of fatigue or stress

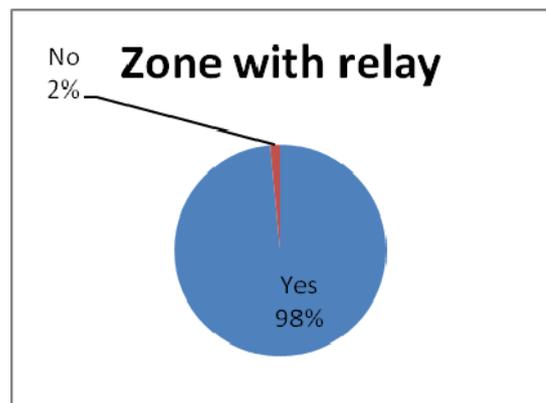


Figure 7

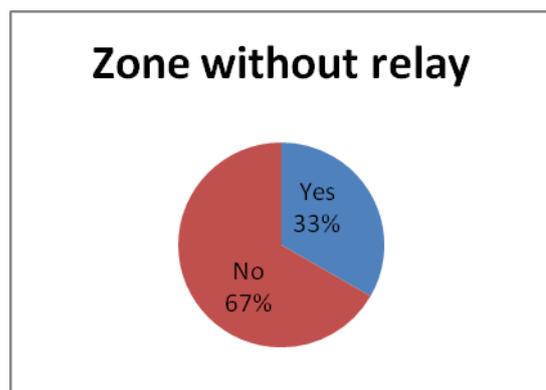


Figure 8

We can observe that in the nearby area of the relay, people are much more tired or stressed, and in the area which is not near a relay only a third of the people suffer from fatigue or stress. In the first case, about 98% are tired all the time or stressed (Figure 7), meanwhile in the second case there are 33% (Figure 8), so we can see a rather big difference.

Cardiac diseases

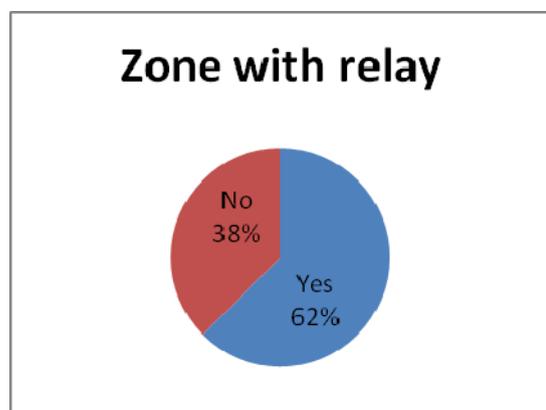


Figure 9

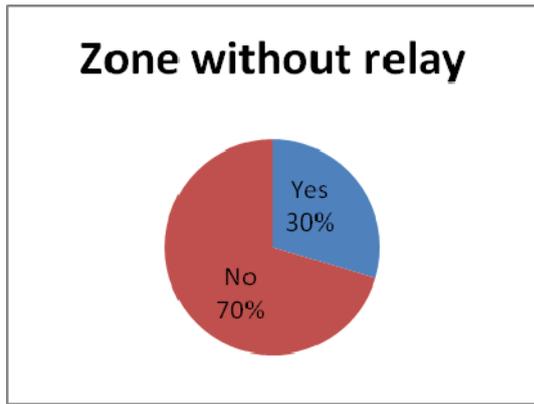


Figure 10

We can observe that the percentage of people that suffer of cardiac diseases in the area with a relay (Figure 9) is about 2 times bigger than the one in the area without a relay (Figure 10). There are people around the age of 19-30 that suffer from blood pressure disorder or strokes, and people over the age of 30 that have suffered from strokes, mild heart attacks, and heart attack.

Neurological diseases

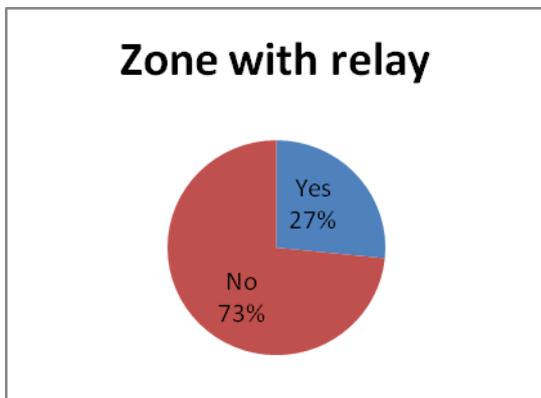


Figure 11

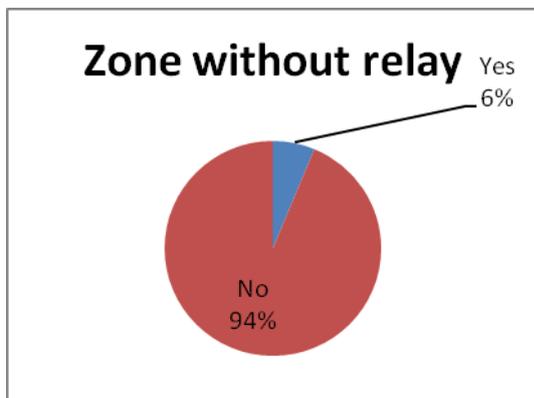


Figure 12

From the surveys answered in the area without a relay (Figure 12), has resulted that 6% of the people in that area have neurological diseases, as they have suffered from strokes; in the other case (Figure 11) the percentage is 4 times bigger, as people have suffered from Alzheimer's disease, Parkinson's and strokes.

Cancer



Figure 13

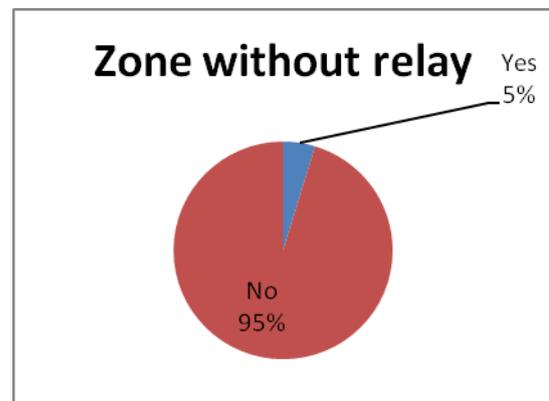


Figure 14

It seems cancer has affected 28% of the people in the area with a relay (Figure 13), these suffering from leukaemia, skin cancer, breast cancer, thyroid cancer or bone cancer. On the other hand, in the area without a relay (Figure 14) there are three persons who suffer from breast cancer or ovarian cancer.

From the surveys above we can see the remarkable differences between the two areas. In the area with a relay, 83% of people that have done the survey are sick, meanwhile in the second case, the area without a relay, only 18% has one of the three types of diseases.

We can observe differences between the diseases also. People either got sick because of the relay either were sick or their disease got started getting worse once the relay was placed. In the area have been registered seven cases of suicide after the first 5 years since it was placed.

Bees have also been affected, in some cases the initial population has been halved in just a year, people being forced to quit or to move the hives far away from the relay.

We can observe that in both cases the bee colonies have had to suffer, so we conclude that bees are affected by the radiation transmitted by the GSM relay placed in the area, for their natural habitat is being disrupted, as they are used to follow the Earth's frequency (7.83 Hz).

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