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Study: Electromagnetic Fields Harm Insects



Why we protect insects

We all want insects to be protected from harmful effects, because our planet and therefore we humans are dependent on the survival of insects. However, the newly published BEEFI study* shows us that mobile phone radiation, as it occurs in everyday life, can already cause damage to insects. Politicians urgently need to respond to this.

New study on insects evaluates the state of research

The BEEFI study is a systematic review study and meta-analysis in accordance with PRISMA guidelines. It evaluates the international state of research on the effects of high-voltage power lines and mobile phone radiation on insects. 119 individual studies passed the quality check for the evaluation, 51 of which could even be used for the meta-analysis. Following peer review, the BEEFI study was accepted and published by the prestigious journal "Reviews on Environmental Health". It is therefore part of scientific knowledge.

Main results of the BEEFI study

"Biological effects of non-thermal EMF on insects are clearly proven in the laboratory." (p. 1, summary)

Insects play many critical roles in ecosystems: They are pollinators, food sources, recyclers and regulators, landscape gardeners and even service providers for humans. The main known causes of insect decline to date are pesticides, landscape sealing, climate change and environmental pollution.

Now another damaging factor is moving into the spotlight: artificial electromagnetic fields emitted by mobile phones and high-voltage power lines. The BEEFI study shows: The reproductive capacity of insects is reduced by mobile phone radiation and by magnetic fields from high-voltage power lines, their genetic material (DNA) is damaged, and their behavior is disturbed. And oxidative cell stress occurs, which leads to a weakening of the immune system, among other things. This means that the BEEFI study closes previous gaps in our knowledge.

Die im Labor nachgewiesene Schädlichkeit für Insekten rechtfertigt bereits jetzt Vorsorgemaßnahmen, zumal die Insekten in der Natur zusätzlich diversen Umweltschadstoffen ausgesetzt sind

Irradiation is harmful – limit values do not protect

"However, some recent human epidemiological studies and field studies in insects, birds and pine trees around cellular towers point to chronic detrimental effects even at current power levels." (p. 7).

"These findings of biological effects in insects starting at around 2 V/m imply that existing standards would have to be revised and made more stringent, to include nature protection/wild-life concerns." (p. 11).

Conclusion: protection policy!

"Based on an assessment of the overall study situation on insects, we must warn against a careless deployment of further mobile telephony infrastructure, as harmful effects on insect populations would be likely, especially if interactions with other noxious agents are taken into account (including high-voltage power lines and artificial lighting). This might lead to further declines of already dwindling populations of pollinators, and would thereby entail costs for humanity." (p. 12).

Demands on politicians

diagnose:funk is calling on politicians to maintain and expand radio-free protection zones for insects. This means:

- > Limiting mobile phone radiation to a maximum of 100 $\mu\text{W}/\text{m}^2$. This is derived from the scientific findings of the BEEFI study and from the setting of limit values. Reception is still possible outdoors and mostly indoors.
- > No new mobile phone masts may be built or operated in nature conservation areas.
- > The interactions between electromagnetic fields and other environmental pollutants must be investigated.
- > Further field studies need to be financed and carried out: How are insect populations already affected by the current infrastructure (mobile communications, high voltage)?

Sources & info on the internet

- > * The original BEEFI study:
Thill A, Cammaerts M-C, Balmori A. (2023): **B**iological **E**ffects of **E**lectromagnetic **F**ields on **I**nsects: a Systematic Review and Metaanalysis, Reviews on Environmental Health
doi.org/10.1515/reveh-2023-0072
www.emf-portal.org/de/article/52384
- > Translations of the BEEFI study and further information on how insects can be protected: www.protect-insects.info

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diagnose:funk is an independent environmental and consumer organization that has been campaigning for protection against electromagnetic fields since 2009. Our motto: Use technology sensibly!

imprint: Diagnose-Funk e.V. | Postfach 15 04 48 | 70076 Stuttgart
www.diagnose-funk.org

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