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Publication | 07.11.2018

Pesticides found in hair samples

Pesticides are ubiquitous in our environment and food

Abstract and main results of the report

Pesticides are ubiquitous in our environment and food. Many pesticides are reported to induce health issues including cancer, neurological pathologies and endocrine disruption. The Greens/EFA Group set up a large-scale campaign to measure human exposure for a selection of 30 pesticides, reported as endocrine disruptors, among the EU population.

Hair analysis was chosen to investigate pesticide exposure because hair is a unique and reliable biomonitoring tool to investigate long-term chronic exposure. Moreover, xenobiotics that are present in blood are incorporated into the hair structure during hair synthesis in the scalp and incorporated substances have increased stability. As hair grows about 1 cm per month, the analysis of each centimetre informs about average exposure over a one-month period. In addition, hair is easy to sample and to ship to the laboratory.

148 hair samples were collected from 6 EU countries: Germany, Denmark, United Kingdom (Wales), Italy, France and Belgium between the end of July and October 2018. Samples were analysed to search for a selection of 30 pesticides including insecticides, fungicides and herbicides.

The main results of the study indicate:

- 15 pesticides out of 30 were detected at least once
- 60.1% of analysed samples contain at least one pesticide residue
- 23.6% of analysed samples contain at least two pesticide residues
- The most occurring pesticides are:
    - fipronil (insecticide) found in 29.7% of samples,
    - propiconazole (fungicide) found in 18.9% of samples,
    - permethrin (insecticide) found in 18.9% of samples,
    - chlorpyrifos-ethyl (insecticide) found in 10.1% of samples
- Highest proportion of samples with pesticide residues (84.6%) was found for the United Kingdom (Wales)
- Lowest proportion of samples with pesticide residues (44.1%) was found for Germany
- Highest number of different pesticide residues (4) was found for 4 samples from Belgium
- Highest concentration of pesticide residues (3941.9 pg/mg (ppb)) was found for one sample from

France

Populations from the 6 countries studied are exposed to a variable number and quantity of pesticides depending on their country and their age category.

- READ THE FULL REPORT (pdf)

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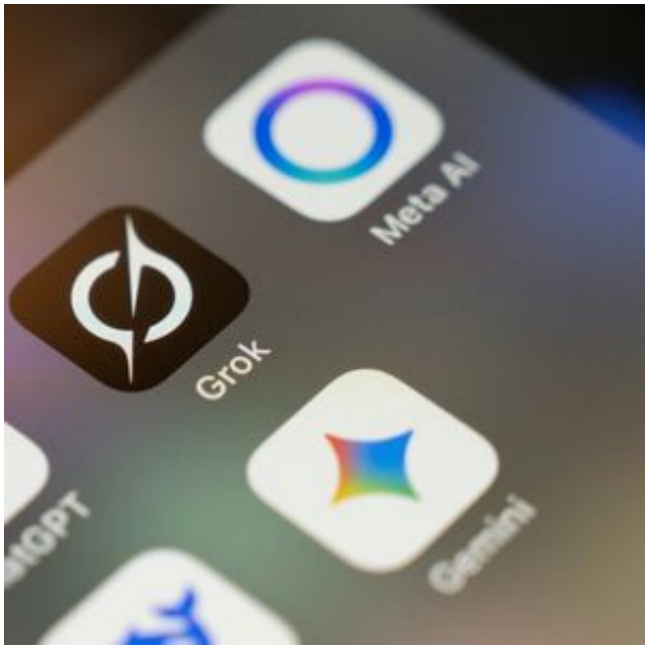

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