

Flaws in industry-funded pesticide evaluation

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Academic researchers have examined raw data from a company-funded safety evaluation of the pesticide chlorpyrifos. They discovered an effect on the brain architecture of the exposed laboratory animals at all tested doses, which was not included in the reported conclusions. Karolinska Institutet in Sweden led this independent study, which is published in the scientific journal *Environmental Health*.

All pesticides must be evaluated in terms of their safety and potential risks for human health before they can officially be approved. Normally the companies that manufacture the products cover the cost of such evaluations and commission test laboratories to perform the necessary animal tests.

Assistant professor Axel Mie at Karolinska Institutet, Christina Rudén at Stockholm University and Philippe Grandjean at Harvard School of Public Health have examined a case in which independent research and company-funded tests deviated, at least in terms of the conclusions drawn in the industry-funded study.

The [company](#)-funded animal test was performed to ascertain how neural development is affected by the pesticide chlorpyrifos, which is used on a wide variety of crops around the world, including some 20 EU countries (not, however, Sweden). The [test](#) laboratory concluded that there was no such effect, even at high doses.

Several weak points

"We have looked at the [study design](#) and raw data from the manufacturer-funded study and found several [weak points](#)," says Axel Mie, assistant professor at Karolinska Institutet's Department of Clinical Science and Education at the Stockholm South General (Söder) Hospital. "For instance, we observed a clear effect on the height of the cerebellum in young rats that were exposed to the substance while still at the fetal stage, even at the lowest tested dose. This was reported neither in the study's summary nor in its [conclusion](#)."

Extensive independent research has also previously indicated that chlorpyrifos adversely affects brain development, including childhood IQ, even at the low doses that consumers are generally exposed to through food.

"One conclusion we draw is that there is a risk that the results of industry-funded toxicity tests are not reported correctly," says Dr. Mie. "This makes it difficult for the authorities to evaluate the pesticides in a safe and valid way. We also conclude that independent academic research should be given a higher status in the evaluation of the safety of chemicals."

More information: Axel Mie et al. Safety of Safety Evaluation of Pesticides: developmental neurotoxicity of chlorpyrifos and chlorpyrifos-methyl, *Environmental Health* (2018). [DOI: 10.1186/s12940-018-0421-y](https://doi.org/10.1186/s12940-018-0421-y)

Provided by Karolinska Institutet

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