

# The difficulty of assessing loss & risk

Oct 31, 2012 by Pesticide Action Network



A recent peer-reviewed [study](#) takes an ambitious approach to modeling losses from pesticide exposures — in both economic and human health terms.

Although the study examines pesticide use in the European Union, the authors run into the same issues that we at PAN encounter: 1) pesticide use reporting as it currently stands is not good [enough](#) ; and 2) industry abuses "confidential business information" protections to keep scientists in the dark.

## Modeling exposure

One might ask how the authors could model such a complex issue. The predictions were made by a mathematical model based on several factors, including scoring the pesticide intake (like inhalation via [drift](#) and ingestion via [food residues](#)) and factors assessing [dose response](#) based on studies from animal models. The authors also accounted for uncertainties, as in, the uncertainty of whether an animal model would accurately predict health outcomes for a given chemical.

Scientists use animal studies to understand mechanisms and levels of toxicity, but there remain questions about the accuracy of modeling human risk factors on the basis of animal tests.

When extrapolated across the entire population in the European Union countries examined, the authors found an average burden of lifetime lost per person of 2.6 hours. Not a huge burden in comparison to a lifetime of a nonsmoker's exposure to secondhand smoke (195 days per person lost over a lifetime). When considering the upper limit of their model (45.3 days lost per person), pesticide exposure was in the same range of "other important stressors."

## ....using hard-to-find data

Although their model's predictions were supported by real-world data, one issue was a lack of sufficient data that could have helped these researchers make a more accurate model, thus making more accurate predictions. The authors were, in part, prevented from getting comprehensive national statistics on applications of individual pesticides due to "confidentiality clauses of the licensee," or confidential business information claims.

Confidential business information is a way for [industry](#) to maintain control over public access to the

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Published on Pesticide Action Network (<http://www.panna.org>)

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science around their products claiming patent protection. If provided with more detailed data, governments could better "evaluate national and international pesticide policy measures." The authors recommend

.. improving European reporting guidelines with respect to application statistics of agricultural pesticides as well as free and unrestricted access to... data by the scientific community.

In the end the authors did construct a model that corresponded well to the contribution of banned substances to health impacts, as assessed by the European Commission. However, these researchers were limited by data available to them.

This limitation, caused in part by confidentiality agreements, is a symptom of a larger problem — [undue corporate influence](#) over valuable information.

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