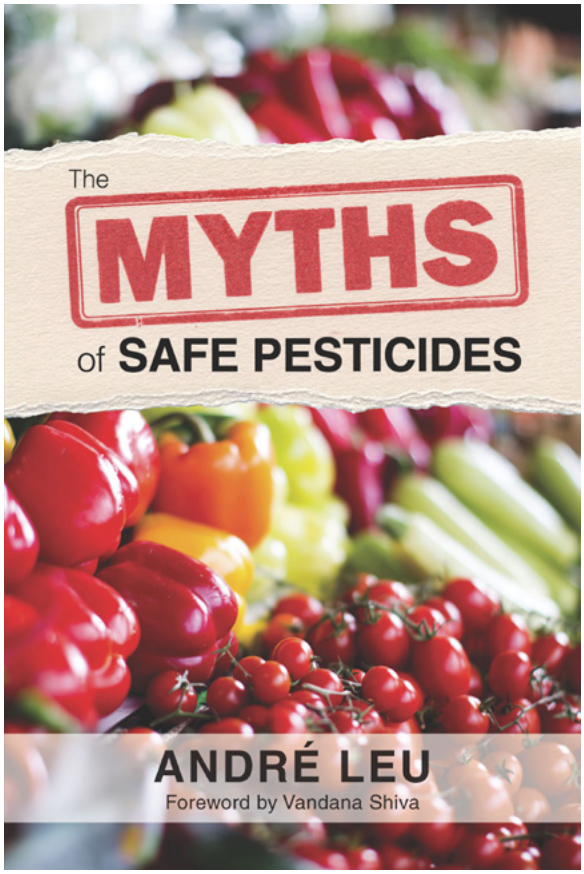
The Myths of Safe Pesticides | A Summary

IFOAM ORGANICS INTERNATIONAL

Organic agriculturist André Leu has weeded through a wealth of respected scientific journals to present peer-reviewed evidence proving that the claims of chemical companies and pesticide regulators are not all they seem. By translating technical jargon into simple terms, Leu breaks down the five most-repeated myths about pesticide safety and refutes them using scientific data.

The Myths of Safe Pesticides outlines the many serious deficiencies in the regulation of toxic chemicals used in our food supply and proposes that much of the criteria used to underpin the current use patterns are based on out of date assumptions rather than on the latest published science. In reality these assumptions are a series of mythologies.



1. The **"RIGOROUSLY TESTED"** Myth. Most pesticide formulations sold on the market are not tested for safety.
2. The **"VERY SMALL AMOUNT"** Myth. The smallest amounts of chemical residues can be harmful.
3. The **"BREAKDOWN"** Myth. Many pesticides are more toxic when they biodegrade.
4. The **"RELIABLE REGULATORY AUTHORITY"** Myth. Regulatory authorities are ignoring a large body of peer-reviewed science showing the harm caused by pesticides and making decisions on data free assumptions.
5. The **"PESTICIDES ARE ESSENTIAL TO FARMING"** Myth. Toxic synthetic pesticides are not needed in farming as organic farming can feed the world.

The scientific credibility of pesticide regulatory authorities should be seriously questioned when they approve the use of pesticides on the basis of data-free assumptions.

A good example of this is the approval of formulated pesticide products as safe on the basis of just testing one of the ingredients without testing the whole formulation. Given that the other chemical ingredients are chemically active as they are added to the formulations to make the active ingredient work more effectively, the assumption that they are inert and will not increase the toxicity of the whole formulation lacks scientific credibility. The limited scientific testing of formulated pesticide products shows that they can be hundreds of times more toxic to humans than the pure single active ingredient. There are no requirements to test the toxicity of the whole formulation to generate credible evidence based scientific data.

Regulatory authorities approve several different pesticides for a crop—such as herbicides, fungicides, and insecticides—on the basis that all of them can be used in the normal production of the crop. Consequently, multiple residues will be found in the crop; residue testing found that 47.4 percent of food in the United States had two or more pesticide residues. The current approval process of testing each pesticide separately is based on the assumption that if each chemical is safe individually then the combinations of these chemicals are also safe. There are a number of published scientific studies showing that combinations of pesticide residues can cause serious adverse health outcomes due to additive or synergistic effects. The failure to test the combinations of approved pesticides for potential health risks means that regulatory authorities do not have any evidence-based data indicating that these residue combinations are safe.

The lack of testing for the metabolites formed by pesticides as they degrade, given that limited testing shows that many of them are more toxic and residual than the pesticide itself, is another massive data gap.

The setting of the Acceptable Daily Intake (ADI) is another example. Given that there are hundreds of studies showing that many chemicals can be endocrine disruptors and therefore more toxic at lower doses, setting the ADI on the basis of extrapolating it from testing done at higher doses is another data-free assumption. The only way to ensure that the ADI is safe and does not act as an endocrine disruptor is to do the testing at the actual residue levels that are set for the ADI.

The special requirements of the fetus, the newborn, and the growing child in relation to developmental neurotoxicity are also subject to data-free assumptions. Currently the pesticide testing used in the regulatory approval processes do not specifically test for any of the risks particular to these age groups, and the ADIs are set based on the testing of adolescent animals. Until testing is specifically designed to assess the dangers to the developing fetus and the very young, there is no evidence-based data specific to this age group.

It is the same with intergenerational effects. Unless testing is done over several generations, especially on organs and physiological processes, these is no data to show that the current ADIs will not cause health problems for the future generations. There are many scientific studies showing that exposure to pesticide residues cause adverse health problems in future generations, so ignoring this issue could prove dangerous.

The regulation of pesticides should be based on data generated through credible scientific studies and testing, not on data-free assumptions as it is currently. Additional testing needs to be done for:

- Mixtures and cocktails of chemicals
- The actual formulated products, not just the active ingredient
- The toxicity of pesticide metabolites
- The special requirements of fetuses, newborns, and growing children
- Endocrine disruption
- Metabolic disruption
- Intergenerational effects on all organs and physiological systems
- Developmental neurotoxicity

Until this is done, regulatory bodies have no credible scientific evidence backing a statement that any level of pesticide residue is safe for humans or the environment.