

FREQUENTLY ASKED QUESTIONS AND RESPONSES FROM CONSUMERS UNION

1. Why is this "news?" Everybody already knows organic foods have less pesticide residues.

RESPONSE: That conventional wisdom has not been supported until now with rigorous statistical analysis of empirical residue data. Only in the last few years have such data become available. We wanted to see what the data show--to get a scientific answer to the question. While it's not a surprise that the data affirm what "everybody knows," it is important to have learned that empirical data support that conclusion.

2. Don't organic foods have lots of residues of natural pesticides, which are just as hazardous as residues of synthetic pesticides? Did your analysis ignore the natural pesticides issue? If so, how could its conclusions be valid?

RESPONSE: Our analysis did not ignore this issue, we tackled it head-on in the paper. Our first observation/conclusion is that there are essentially no published data on residues of natural pesticides in organic foods (or in non-organic foods--these pesticides are used by conventional growers, too). I.e., there is no empirical evidence to indicate which of these residues are present in what foods, at what levels, and with what frequency. Their inferred presence is a theoretical concern that has not been supported as yet with credible test data.

In fact there are few reliable test methods for these residues and none of the major test programs test for them. Residues of natural pesticides are not part of these monitoring programs because they are not expected to be present, and because most of the natural pesticides are relatively low in toxicity. For the same reasons, most are exempt from EPA tolerances. Our paper reviews information on agricultural practices that suggests that natural pesticides are used rarely and sparingly, and that the botanical insecticides, in particular, break down rapidly in the environment. We concluded that better data are needed, both on the occurrence of residues and on the toxicology of some of the natural pesticides. But at present there is no concrete evidence that residues of natural pesticides in organic foods (or other foods) pose any meaningful risks. By contrast, residues of conventional pesticides in the diet pose well documented risks and are the subject of intensive federal and state regulation aimed at managing those risks.

3. Why didn't you test for natural pesticides?

RESPONSE: Most of the residue data we analyzed (except for CU's own tests on 180 samples) come from large, state-of-the-art government test programs that produce the best pesticide residue data available. Those programs don't include tests for natural pesticides, because few validated test methods for them exist, and because there is little reason to expect them to be present. CU did not include tests for natural pesticides because test methods for those residues were not offered by the contract laboratory we employed; and we also did not expect that such residues would be widespread enough to justify the very high costs of specialized testing. If other investigators have collected any data on the actual occurrence of these residues, we hope the data will be published in the scientific literature.

4. Haven't you shown that organic foods contain MORE pesticides than people thought? Your analysis shows 23 to 27 percent of organic samples had some residues of conventional pesticides. Isn't that high?

RESPONSE: Organic foods are not promoted as "pesticide-free," but they are grown without applications of synthetic pesticides. All organic standards recognize that some low-level contamination (such as from long-lived residues of banned organochlorine pesticides, or from "drift" from adjacent non-organic farms) is unavoidable, and such low-level residues are permitted in certified organic foods. Our analysis shows that the residues in organic samples that had them were generally very low, and almost always well within the legal definition of organic. When we eliminated organochlorine residues like DDT and dieldrin (banned years ago, but persistent in soils) from our analysis of the USDA data, the percent of organic samples with at least one residue dropped from 23% to 13%. The point is not that organic foods have ZERO residues, but that they are far less likely to have residues, and any residues that they do have are likely to be lower than the same residues in conventionally grown samples of the same crops.

5. So what? Isn't it true that the residues in conventionally grown foods don't pose any significant risks to health, so why does it matter if organically grown foods have fewer residues?

RESPONSE: Risks (and safety) are relative. People who choose organic fruits and vegetables will be exposed to pesticide residues only about one-third as often, and to fewer residues, usually at lower levels, as are people who eat conventional produce. This does represent a significant reduction in exposure to toxic residues and associated risk, in our judgment.

Let's put that risk in perspective: First, we believe consumers should eat lots of fresh fruits and vegetables, and feed their kids plenty of these nutritious foods, because the benefits outweigh the risks. Parents should not feed their children

less fresh produce out of fear of pesticide residues. BUT, that said, which foods you choose can substantially affect your level of pesticide exposure. Consumers Union has published several previous analyses (available on our web sites) showing that certain foods (e.g., apples, peaches, spinach, green beans) have many residues, at comparatively high levels, while some other foods have relatively fewer and/or lower residues (e.g., bananas, broccoli, carrots, fruit juices). Our current paper shows that organic foods generally also have fewer and lower residues than non-organic samples of the same crops.

Another perspective: Almost all pesticide residues detected in foods on the U.S. market are within legal limits, and essentially all of them are well below levels that are overtly harmful. That is, they would give a child a dose that is substantially lower than the dose that has had measurable adverse effects in studies with lab animals. However, there is a wide "gray area" between levels that are clearly harmful, and the far lower levels that are "reasonably certain to cause no harm." Generally speaking, toxicologists apply a safety factor of 100- to 1000-fold; i.e., presumed "safe" levels are 100 to 1000 times lower than levels that cause detectable harm in lab animals. Many legal limits for residues and the doses resulting from exposures to residues in conventional foods fall in this "gray area"-they are higher than the "almost certainly safe" level, while below the "clearly harmful" level. It is the goal of national legislation (the Food Quality Protection Act) and the US EPA's regulatory programs to adjust the legal limits on pesticides in foods, so that actual exposures are kept below the "almost certainly safe" level. But this is an enormous task (there are about 10,000 different legal limits that need to be reviewed), and the EPA's work is far from completed. Meanwhile, many current legal limits and current residues found in foods are high enough to raise significant concerns: They deliver doses above those scientists can be reasonably certain pose no risk of harm. This is especially true when the combined risks of multiple residues in the diet are considered.

In sum, then, there are well founded scientific reasons to conclude that ordinary dietary exposure to pesticide residues, especially in young children, while not overtly hazardous, is not "safe enough." Consumers who would like to reduce their own and their children's dietary exposure to pesticides are reasonable in wanting to do so, and organically grown foods can be a useful choice in helping to achieve that goal.

6. Aren't organic foods more likely to be contaminated with natural toxins, like mold poisons, or with deadly bacteria, like E. coli 0157:H7? So how can you say organic food is safer?

RESPONSE: That's an interesting assertion, but many of the assumptions behind it are debatable, and it hasn't been supported with any credible data showing that organic foods actually are more contaminated, as far as we know.

Empirical data are needed that could determine in statistically reliable ways whether there are any differences between organic and non-organic foods in terms of contamination with mold poisons, pathogenic bacteria, or other food-borne hazards. Without such data, this is a speculative hypothesis that still needs to be tested scientifically.

Our analysis focused just on pesticide residues. On that question, there now ARE empirical data, and the data show that organically grown foods are less likely to have any residues, and when they have residues, have fewer and lower residues. We prefer to stick to issues on which we have data.

7. Who paid for your study, and are you working with the organic industry to promote organic foods?

RESPONSE: CU is an independent testing and publishing organization. We have no connections with any commercial interests. CU's testing (which was done in 1997, to support a report in Consumer Reports magazine in 1998) was part of CU's Fiscal Year 1998 test budget (which comes from revenues derived from the sale of our information products, such as Consumer Reports). The analysis of USDA data and other analytical work that went into the paper was carried out by a scientist on staff (Dr. Groth) and by two CU consultants (Dr. Charles Benbrook, Ms. Karen Benbrook). This analysis was made possible in large part by a database we built to carry out other work on pesticide policy. That policy project was supported in part by CU's own revenues, and in part by grants from the Pew Charitable Trusts, the Joyce Foundation, and the W. Alton Jones Foundation. The analysis of data on organic foods was conducted largely after the work supported by the grants had been completed; while it used the analytical capability we had developed under the grants, it was not part of the grant-funded work.

While we are happy to explain our findings, and what they do and don't mean, to all interested parties, including the organic food industry, and we will assert our rights to prevent commercial use of our name, if the need arises. Our analysis has been published in a peer-reviewed scientific journal, where it is available to the public and the rest of the scientific community. Anyone is free to cite these published results; we hope everyone will make every effort to cite them accurately and in context.

8. Does Consumers Union recommend that consumers buy organic foods?

RESPONSE: Consumers Union is not promoting any particular dietary choices (other than that parents should continue to feed their children healthful fruits and vegetables!) Many subscribers to CU's information products either already buy organic foods, or are interested in knowing if they are worth buying. For that

reason this is an interesting product category to us, and we have sought objective information to inform our readers about the possible advantages and/or disadvantages of organic foods. This interest led to our 1997 tests and the 1998 report. Subsequent to our 1997 testing (which looked at a limited number of samples of just four foods), we were interested in finding more data and expanding the analysis. Eventually the Benbrook database (which was designed to analyze USDA pesticide residue for CU) contained enough data on organic samples to support an analysis of that data set. Brian Baker of OMRI was also interested in the same question and was able to obtain and analyze the California DPR data. Discussion among the scientists involved led us to combine the three data sets and analyses and to prepare a paper for publication presenting the combined results.

We are interested in objective facts. If analysis of residue data had shown that organic foods had as many residues as conventionally grown foods, we would have been just as assertive in informing consumers of that. Our 1997 report also looked at prices and quality (taste tests) of organic versus conventional fruits and vegetables, all of which important to consumers. The present paper focuses on pesticide residue data because that aspect that is amenable to detailed objective analysis. The results suggest that consumers who buy organic foods to reduce their intake of pesticide residues are getting what they pay for. In that context, CU does recommend organic foods, as one reasonable choice that helps consumers who want to reduce pesticide exposure meet that goal. Consumers will need to strike their own balance among reduction of pesticide exposure and the cost and convenience aspects of choosing foods produced different ways.

9. Why does it cost \$18.00 for a copy of your paper? Why can't you post it on the internet for free, like your other reports on pesticide data?

RESPONSE: We published the paper in a peer-reviewed scientific journal, which owns the copyright. Taylor and Francis (the publisher of Food Additives and Contaminants) is a highly respected scientific publishing house, and a commercial enterprise. They have a perfect right to charge for copies of the paper. Sorry, it's not ours to give away.