

Pesticide Alert: Don't Be Fooled by the Dirty Dozen

A new "Dirty Dozen" list points out the most pesticide-contaminated food, but don't take that to mean that everything else is OK. *by Leah Zerbe May 17, 2010*



If it's not organic, pesticides can be in your food as well as on it.

[Chemical-based farming](#) causes problems we can't veggie-wash our way out of. It's common knowledge that conventional fruits and vegetables are contaminated with pesticide residues on their skins and peels. But what many people don't realize is that the problem of pesticides in food is more than skin deep. Pesticides sink into the most nutritious parts of fruits and vegetables—and can't be washed or peeled off.

And while a new Environmental Working Group (EWG) report highlights the "Dirty Dozen" of the produce world—food to always buy organic due to the amount of pesticides used in growing them—

it's important to note that buying produce that isn't on that list might not be as protective as you might think, if it's not organic. And that includes food on the EWG's "Clean 15" list. That's because emerging research is finding that pesticide exposure—even in tiny amounts—can mess with the way our genes function throughout our lives and is linked to a range of ailments, from certain [cancers](#) to diabetes and obesity. Just this week, researchers found a link between pesticides in food and ADHD in children. "My first reaction is, only buy organic," says Warren Porter, PhD, professor of zoology at the University of Wisconsin–Madison and molecular and environmental toxicologist. "This list implies that one or two pesticides on a product are OK, but not five or 10."

The EWG "Shopper's Guide to Pesticides" lists celery, peaches, strawberries, apples, blueberries, nectarines, bell peppers, spinach, kale, cherries, potatoes, and imported grapes as the "Dirty Dozen," the ones to always buy organic. Its Clean 15 list, the produce that's lowest in the amount of different pesticides used, includes onions, avocados, sweet corn, pineapple, mangos, sweet peas, asparagus, kiwi, cabbage, eggplant, cantaloupe, watermelon, grapefruit, sweet potato, and honeydew melon.

While choosing organic versions of the produce found on the Dirty Dozen list is certainly a move in the right direction, it's also important to understand that eating non-organically grown fruits and vegetables listed on the Clean 15 list could still subject you to exposure to harmful chemicals. Toxic chemicals aren't just lurking on the outside of non-organic fruits and veggies, but actually inside them, too. "The fat and water-solubility properties of the pesticides and the non-ionic solvents and surfactants used offer access of the chemicals to every cell in the produce, and thus to every cell in your body," explains Porter. "It's a very serious matter, especially since we know that our own hormone systems respond in the parts per trillion to chemicals."

And although dozens of pesticides are used to grow our food, manufacturers are not required to test for a chemical's impact on learning, aggressive behavior, or its effect on sexual behavior, immune function, or shifts in hormones or fetal development patterns, all things that research has shown will clearly affect health during a lifespan. "The entire EPA [Environmental Protection Agency] registration process is functionally a bait-and-switch process," Porter says. What the public buys off the shelf is *not* what is registered. "Only the active ingredient—in ultra-pure form—is ever tested," he says, adding that all the other "inert" ingredients mix and can make the chemical [more toxic than originally believed](#). "Furthermore, the EPA registration process is not one that considers safety. The decision as to whether or not to register a product is based on economic criteria, not safety." Products are not tested for how they affect gene expression and activity, for example. "There is significant

concern now that we may be affecting generations yet unborn because of potential impacts on the way our genes are expressed, and the possibility that we could pass these changes on to subsequent generations," Porter says. "These kinds of effects are starting to be demonstrated in multiple [environmental chemicals](#)," he adds.

Chemical pesticides affect us in other ways, too. We get a double-whammy exposure when they wind up in our food and wash off fields into our drinking water supplies. But production, transportation, and application of farming chemicals are the most energy-intensive part of conventional agriculture—even more than food miles. Aside from that, pesticides kill beneficial, carbon-storing microorganisms in the soil, reducing soil quality, and opening the doors up for more plant diseases and difficulties surviving during droughts.

Here's how to avoid pesticides in food, in water and everywhere else in your life:

- **[Demand Organic](#)**. Eating organic foods dramatically lowers the amount of disease-causing pesticides in your body. A study published in 2005 looked at pesticide breakdown materials in Seattle children who ate conventional produce. They found they were excreting two known neurotoxic pesticides at parts per billion levels (remember, these things negatively affect us at much lower levels than that). "They were being dosed daily with poisons in their chemically produced foods," says Porter. But when those same children were given organic food, their contamination levels dropped significantly.

- **Eat whole**. Porter explains that two ingredients found in most processed foods in one way or another—genetically engineered corn and soy—likely contain more pesticides because the plants are genetically engineered to survive sprayings of plant-killing glyphosate (Roundup). The problem is, the overuse of pesticides (much like we're seeing with antibiotics) is leading to [pesticide-resistant superweeds](#), forcing farmers to use higher doses of the poison on our crops, and even to "stack" pesticides, meaning use several different types on a crop. Cutting back on processed foods will reduce your exposure. Remember to go for organic whole foods, since you'll likely find chemicals inside conventional whole fruits and vegetables.

- **Save money on organic**. You can afford organic. The trick is to cook with whole, organic ingredients (soups and Crock-Pot recipes are quick and easy ways to do this), and to eat in season. Hit up your local farmer's market and buy organic in bulk, and then [can or freeze extra tomatoes](#), [pickle cucumbers](#) and beans, [freeze herbs](#), or make [jam or jelly](#). Another great way to save

money and afford organic is to cut meat out of your daily menu. Opt for organic quinoa, lentils, or dried organic beans as super-cheap, healthy protein sources, and save organic meat for special occasions. And of course, to really save money, grow your own organic vegetable garden. You can grow more than a hundred pounds of produce on a small plot!

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