The New Dirty Dozen: 12 Foods to Eat Organic

The latest list of foods with the highest pesticide residue includes some familiar fruits and vegetables, and some surprises.

By Dan Shapley

Foods With Pesticide Residue

The benefits of eating organic food go straight to the farm, where no pesticides and chemical fertilizers are used to grow the organic produce shipped to grocers. That means workers and farm neighbors aren't exposed to potentially harmful chemicals, it means less fossil fuel converted into fertilizers and it means healthier soil that should sustain crops for generations to come.

For individuals, organic food also has benefits. Eating organic means avoiding the pesticide residue left on foods, and it may even mean more nutritious varietals, though research into that subject has yielded mixed results. While there are few if any proven health impacts from consuming trace quantities of pesticides on foods, a growing number of people take the precaution of avoiding exposure just in case, particularly in the cases of pregnant women (growing babies are exposed to most of the chemicals that mom consume) and the parents of young children.

But organic food can cost more, meaning many families are loathe to shell out the extra cash for organic produce on every shopping trip. That's what makes the Environmental Working Group's annual list of the dirty dozen foods so useful. The group analyzes Department of Agriculture data about pesticide residue and ranks foods based on how much or little pesticide residue they have. The group has estimated that individuals can reduce their exposure by 80% if they switch to organic when buying these 12 foods.
The USDA and farm and food industry representatives are quick to remind consumers that the government sets allowable pesticide residue limits it deems safe, and the produce for sale in your grocery store should meet those standards. Watchdogs like Environmental Working Group see those limits as too liberal, and see the dirty dozen list as a teaching tool to educate consumers about the benefits of organic food.

Even Environmental Working Group says that the benefits of eating fresh fruits and vegetables outweighs the known risks of consuming pesticide residue. At TheDailyGreen.com, we always favor educating consumers so that we can make the decision for ourselves.

Note: Each annual dirty dozen list reflects testing data from the previous year's harvest, and because some pesticide use is dependent on weather conditions that vary by farm, it may not reflect the pesticide residue on produce in your grocery store. That's why we include not only those fruits and vegetables on Environmental Working Group's current list, but produce that has made the list in the past, as well as information about pesticides used to produce meat, dairy and some other favorite foods that aren't on Environmental Working Group's latest dirty dozen list. In general, tree fruits, berries, leafy greens dominate the list year after year. Since the USDA tests produce after a typical household preparation, fruits and vegetables with thick skins that are removed before eating (melons, avocado, corn, etc.) tend to have the lowest amounts of pesticide residue. If you don't see a favorite food here, check Whats On My Food, a project of the Pesticide Action Network that makes the same USDA pesticide residue testing data available in an easy-to-use database.

**Apples**

Apples consistently rank near the top of the annual dirty dozen list. More than 40 different pesticides have been detected on apples, because fungus and insect threats prompt farmers to spray various chemicals on their orchards. Not surprisingly, pesticide residue is also found in apple juice and apple sauce, making all apple products smart foods to buy organic. (Though until 2014, organic apples and pears may be treated with antibiotics.)

Some recommend peeling apples to reduce exposure to pesticide residue, but be aware that you're peeling away many of the fruit's most beneficial nutrients when you do so!

Can't find organic apples? Safer alternatives include watermelon, bananas and tangerines.
Celery

Another perennial food on the dirty dozen list is celery. It's a good one to commit to memory, since it doesn't fit the three main categories of foods with the highest pesticide residue (tree fruits, berries and leafy greens). USDA tests have found more than 60 different pesticides on celery.

Can't find organic celery? Safer alternatives with a similar crunch include broccoli, radishes and onions. Fresh bok choy is another option, familiar to the farmers' market crowd.

Cherry Tomatoes

Tomatoes have been in for some bad press in the past few years, with exposes like *Tomatoland* highlighting the environmental, human and culinary costs of the modern tomato. Alas, cherry tomatoes show up on the Environmental Working Group's 2013 list of foods with the most pesticide residue. There really is no substitute for a good, fresh tomato. If you can't grow your own, buy from a farmers' market or CSA, then try the organic produce section of your local grocery.

Cucumbers

Making the 2013 list of foods with the highest pesticide residue: Cucumbers, which have been laced with as many as 35 different pesticides that remain on the skin when it's time for salad-making. Peeling the skin off may reduce your chances of ingesting some of them.
Grapes

Another perennial entrant on the dirty dozen list, imported grapes can have more than 30 pesticides. Raisins, not surprisingly, also have high pesticide residue tests. Makes you wonder about wine, eh?

Hot Peppers

Joining sweet peppers on the list of foods with the most pesticide residue: hot peppers. While some spices can approximate the heat, there is no substitute for a pesticide-laced hot pepper except a good, organic hot pepper.

Nectarines (Imported)

Nectarines, at least imported ones, are among the most highly contaminated tree fruits. Domestic nectarines don't test with as much pesticide residue, but overall 33 pesticides have been detected on nectarines. Can't find organic nectarines? Try pineapple, papaya or mango.
Peaches

Another tree fruit that always makes the dirty dozen list: peaches. More than 60 pesticides have been found on peaches, an nearly as many in single-serving packs, but far fewer in canned peaches. Safer alternatives include watermelon, tangerines, oranges and grapefruit.

Potatoes

America's favorite vegetable is the potato; unfortunately, more than 35 pesticides have been detected on potatoes in USDA testing. Sweet potatoes offer a delicious alternative with less chance of pesticide residue.

Strawberries

Strawberries are always on the list of dirty dozen foods, in part because fungus prompts farmers to spray, and pesticide residue remains on berries sold at market. Nearly 60 different pesticides have been found on strawberries, though fewer are found on frozen strawberries.

Can't find organic strawberries? Safer alternatives include kiwi and pineapples.
Spinach

Leading the leafy green pesticide residue category is spinach, with nearly 50 different pesticides. (While frozen spinach has nearly as many, canned has had fewer detected pesticides.)

Sweet Bell Peppers

Another fruit that usually makes the dirty dozen list because it tends to have high pesticide residue is the sweet bell pepper, in all of its colorful varieties. Nearly 50 different pesticides have been detected on sweet bell peppers.

Kale

A superfood, traditionally kale is known as a hardier vegetable that rarely suffers from pests and disease, but it was found to have high amounts of pesticide residue when tested in each of the past several years. Luckily kale is a staple of the organic farm market scene—and the point that it's a cliche. If you want kale, you can find it organic.

Can't find organic kale? Safer alternatives include cabbage, asparagus and broccoli. Dandelion greens also make a nutritious alternative.
Collard Greens

Put on par with kale on the annual dirty dozen list, collard greens tests have revealed more than 45 pesticides. Alternatives include Brussels sprouts, dandelion greens and cabbage.

Zucchini

The only solace in knowing that the humble summer squash is often laced with chemical pesticides is that your neighbor has grown a bumper crop, and you're going to get more than you can eat anyway. This prolific squash is a must in any garden.

Lettuce

Joining spinach in the leafy greens category, lettuce often makes the list of dirty dozen foods with the most pesticides. More than 50 pesticides have been identified on lettuce.
Blueberries

Blueberries usually make the dirty dozen list, since more than 50 pesticides have been detected as residue on them. Frozen blueberries have proved somewhat less contaminated. Unfortunately, obvious alternatives like cranberries and cherries, while they may not make the dirty dozen list this year, are often contaminated themselves. For breakfast cereal, if you can't find organic blueberries, consider topping with bananas.

Fatty Meats

While it doesn't make the list of dirty dozen foods, meat makes our list. While there are generally no pesticides found in beef muscle, fat is another story. Fewer than a dozen pesticides have been detected in beef fat, but among them are long-lived chemicals that accumulate in human fats just as they do in beef cattle. The same pattern holds for other meats, with pork fat and chicken thighs tallying the most pesticide residue, while lean meat comes up clean.

Milk

Pesticides and other man-made chemicals have been found in human breast milk, so it should come as no surprise that they have been found in dairy products, too. Twelve different pesticides have been identified in milk, and milk is of special concern because it is a staple of a child's diets.
Coffee

While the watchdog lists don't include data on coffee, many of the coffee beans we buy are grown in countries with lax regulations for use of pesticides. Look for the USDA Organic label to ensure you're not buying beans that have been grown or processed with the use of potentially harmful chemicals.

Go a step or two further, and look for the Fair Trade Certified and Rainforest Alliance (or Bird Friendly) labels to ensure that your purchase supports farmers who are paid fairly and treated well. And look for shade-grown (Rainforest Alliance- or Bird Friendly-certified) varieties for the trifecta; that way you know the coffee is being grown under the canopy of the rainforest, leaving those ancient trees intact, along with the wildlife – particularly songbirds – that call them home.

Wine

Similarly to coffee, there's no watchdog reporting on pesticides found in wine, but grapes are among the crops that are typically heavily doused with pesticides to ward off fungus and bugs. Fortunately, there are more and more fine organic wines on the market. Many will be labeled "made with organic grapes," rather than "organic wine" because winemakers add sulfites as a preservative to allow for long-distance shipping.

Chocolate

Like coffee beans, cocoa beans are grown across the developing world, sometimes in countries without strict laws governing use of pesticides, worker rights or other factors we'd consider basic in the U.S. Buying organic chocolate ensures your sweet treat isn't harming the environment or workers elsewhere.
Buy the Clean 16

If the cost of buying all organic isn't within your budget, fear not. Check out The Daily Green's list of fruit and vegetables so clean of pesticides you don't have to buy organic. (Of course, buying organic is always a good choice for the health of farms and farm workers, regardless of the residue left on the end product.) The feature also includes tips for buying, cleaning, storing and using each fruit and vegetable – as well as delicious recipes! Here are some of the fresh produce typically low in pesticide residue:

- Onions
- Sweet Corn
- Pineapple
- Avocado
- Asparagus
- Frozen Sweet peas
- Mango
- Papayas
- Eggplant
- Cantaloupe (domestic)
- Kiwi
- Cabbage
- Watermelon
- Sweet Potatoes
- Grapefruit
- Mushrooms