

Will choosing organic foods reduce my family's exposure to pesticides?

Which conventionally-grown foods pose the highest risk from pesticide residues? Which the least?



## Reducing Pesticide Risk in Your Diet

### Monitoring Pesticide Dietary Exposures

The average American is exposed to 10 to 13 pesticide residues each day from food, beverages and drinking water. While pesticide levels, in general, are not cause for alarm in healthy adults, they pose a threat to developing fetuses, infants and children. With the goal of protecting this vulnerable group from high-pesticide-risk foods, the US Department of Agriculture's Pesticide Data Program (PDP) tests 12,000-15,000 samples each year of the fruits,

vegetables and other foods that make up a significant portion of infants' and children's diets.

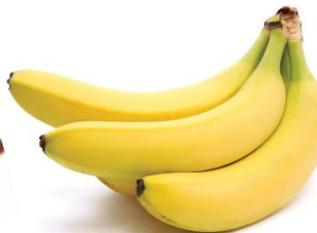
PDP data over the last fourteen years provides a solid basis to compare pesticide risks in conventional and organic foods. It also reveals distinct seasonal spikes in pesticide residue levels in imported produce. Based on the PDP and data on the toxicity of pesticides from the Environmental Protection Agency, the Organic Center created a Dietary Risk Index (DRI) and calculated a DRI score for all foods tested by the PDP. These DRI scores are measures of relative risk from individual servings of food and are the basis of the ranking of foods by pesticide risk in the Center's pocket guide "Organic Essentials."

*While the PDP targets those pesticides that pose the highest dietary risks, all pesticides are toxic. In addition to workers applying them in the field, birds, small aquatic organisms and beneficial insects can be harmed.*

### Foods with the Highest Dietary Risk Index Score



### Foods with the Lowest Dietary Risk Index Score



Access the Center's "Organic Essentials" pocket guide at:  
[www.organic-center.org/reportfiles/TOC\\_Pocket\\_Guide.pdf](http://www.organic-center.org/reportfiles/TOC_Pocket_Guide.pdf)

By far the riskiest pesticide commonly found in conventional apples in 2005 was azinphos-methyl (AZM).

.... a typical child would be exposed to AZM through apples around 50 times a year, depending on how often he or she eats apples.



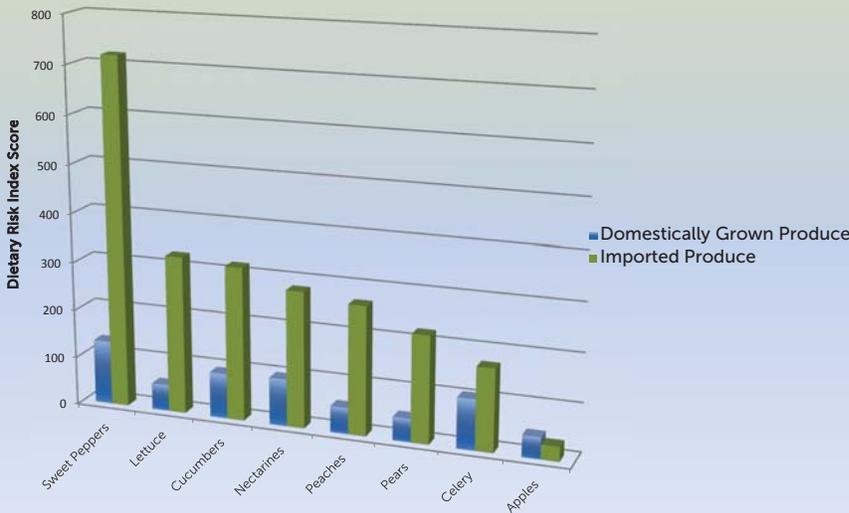
### The Case of Milk

As one of the most important foods for infants and children, tracking pesticide residues in milk is a high-priority for the PDP. In 2004 testing, nearly all milk samples, conventional and organic, contained DDE, a breakdown product of DDT and low levels of the industrial chemical diphenylamine (DPA). More worrisome, a significant share of conventional milk samples contained residues of insecticides, including the endocrine disruptor endosulfan.



# Reducing Pesticide Risk in Your Diet

**Domestic and Imported Conventional Fruits and Vegetables with Relatively High Pesticide Dietary Risk Index Scores**



## High- and Low-Risk Conventionally Grown Foods

Why are peaches, apples and bell peppers more likely to contain pesticide residues than bananas, grapefruit and onions? Hundreds of thousands of food samples show that skinless or soft-skinned fruits and vegetables pose greater pesticide risk than produce with thick skins, shells or peels that are not eaten. Meat and poultry, grains and flour, and oils are some of the other

major food groups that contain the lowest levels and fewest number of pesticide residues.

Imported produce is one category that shows important differences in pesticide risk levels. Imported berries, grapes, leafy greens, cucumbers and other highly perishable foods have DRI scores as much as two-to-three times as high as the same domestically grown foods. For this reason, the Organic Center recommends that consumers opt for domestically produced canned and frozen fruits and vegetables during the winter months, instead of conventionally grown fresh produce.

Drinking water is a major source of pesticide exposure, especially for children living in the Midwest and other farming areas.

## How Organics Compare

### Fresh Blueberries Tested by the PDP in 2008

- Organic blueberry samples with multiple residues = 0%
- Conventional blueberry samples with multiple residues = 77%
- Average number of residues in conventional blueberries = 2.5
- Percent of conventional blueberries with 3 or more residues = 44%

Maximum number of residues in one conventional blueberry sample = 16



- Conventionally grown fruits and veggies are about eight times more likely than fresh organic products to carry multiple residues.
- By choosing organic produce, Americans can reduce overall pesticide dietary risks by about 97%



## Pesticides in Organic Farming?

About eighty percent of organically grown fruits and vegetables are pesticide free, while some twenty percent still contain some residues. Why?

- The National Organic Program (NOP) approves approximately 315 pesticide products containing natural ingredients for use in organic agriculture under specific restrictions imposed by organic certifiers.
- Synthetic pesticides not approved for use on organic farms do sometimes find their way onto organic food as a result of drift, carryover in the soil, or movement in the air.
- The NOP will require certifiers to start periodic pesticide residue testing in September, 2010 in order to further improve the safety of all organic food and maintain public trust in the organic label.

Access more information on *Reducing Pesticides in Your Diet* and the State of Science Review, "Simplifying the Pesticide Risk Equation: The Organic Option" at [www.organic-center.org](http://www.organic-center.org), under TOC Reports. Contact the author, Dr. Charles Benbrook, at [cbenbrook@organic-center.org](mailto:cbenbrook@organic-center.org).



sometimes the greatest ideas are the simplest.



The Organic Center  
P.O. Box 20513  
Boulder, CO 80308  
(303) 499-1840

[www.organic-center.org](http://www.organic-center.org)