A Few Bad Apples...

Pesticides in Your Produce
Why Supermarkets should 'Test and Tell'

ENVIRONMENTAL WORKING GROUP™

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Acknowledgments

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Environmental Working Group

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Foreword

You stroll into the produce department of your local supermarket—a Kroger, a Safeway, almost any supermarket—and the first thing you see are those gorgeous mounds of fresh, ripe apples.

Granny Smiths, Fuji's, Red Delicious, Golden Delicious, Gala…. All your favorites. Which ones go in the cart?

Would it help to know that this particular display of Golden Delicious apples has residues of three different bug killers, all of which the government is scrutinizing right now, all of which disrupt the nervous system in the same way, and one of which regulators finally banned last year, after decades of suspicion and study and stalling, when they concluded the chemical posed an unacceptably high risk to children?

Would it help to know that the adjacent pile of Red Delicious has *no* insecticides at all on it?

Decisions, decisions. You love both varieties. They're the same price. Which do you buy?

No brainer. *I'll take three pounds without the bug killers.*

Of course, in the back of your mind you hear a voice scolding you for this "emotional" purchasing behavior (albeit in a food store that assaults you with emotional appeals on every aisle…). Could be the voice of a pesticide company flack. Could be a grocery executive or an apple industry lobbyist or a government official. Same difference.

"There's absolutely no pesticide risk to either apple" the voice reassures.

Uh huh. *Make that five pounds without the pesticides.*

The next time it might well be the Golden Delicious that are cleaner, or the Fujis or the Galas. It happens all the time. You just don't know—unless you happen to test your own foods on the spot. For years, the government *has* tested, and found the same thing we found testing Washington state apples this winter: wide variations in pesticide contamination for most fruits and vegetables. And we're not talking organic versus conventional food. We're talking conventional versus conventional. We *are* comparing apples to apples. It turns out that some crops of apples and

Some crops of apples and other produce simply come to market much cleaner than others.

The government spends millions of your tax dollars testing produce every year, then sits on the results for two years.

other produce simply come to market much cleaner than others because they're grown cleaner—even if they're not organic.

But these facts are rarely of any use to you as you cruise the produce section. The government spends millions of your tax dollars testing produce every year, then sits on the results for two years or more before making them public. The findings never get to shoppers in plain English. And if they did, the government's message would be that "Everything is safe." That's what they're pressured to say by lobbyists for pesticide companies and agribusiness.

Couldn't grocery stores help you out? Sure.

As this report shows, the pesticide lobby is remarkably successful in convincing government officials to mislead consumers into believing the food supply is perfectly safe—right up until regulators ban a dangerous pesticide. That's what happened just last August, when the highly toxic bug killer methyl parathion was abruptly yanked by federal officials for use on apples and other foods kids eat by the ton. This "safe" insecticide had been contaminating apples and other foods at "safe levels" for decades. Then—poof!—it had to be banned.

But with the pesticide lobby hammering away, the government dithered so long in making the decision last year that millions of consumers—and millions of kids—ate methyl parathion all through this winter on the 1999 apple crop. We found the bug killer at unsafe levels in two out of twenty-five bags of Washington state apples—almost exactly the rate the government found in its "most recent" tests, made public in 1998 from the apple crop of 1996. One bag of apples went over EPA's safety limit by a factor of ten.

Couldn't grocery stores help you out? Sure. But most don't tell you anything at all about pesticide levels in produce. They don't really want to bring up the subject. The unwritten code of silence in the grocery biz says they won't compete with one another on anything but price, appearance and taste. When the subject of pesticides comes up, most grocers prefer to say, "Everything meets federal standards."

They might as well hang a sign over their produce departments.

Pesticides On Our Fruits and Vegetables?

Good enough for government work!

With this report, EWG launches a project to change all that. It's a food testing program, web site and newsletter system to give shoppers real-time information on pesticide levels in foods. Information you can't get anywhere else. We're starting with a food we love (and kids love) that happens to be one of the dirtier crops from a pesticide

standpoint—apples. We focus on apples grown in Washington state because they dominate the domestic *and* export market. The apple trade association—appropriately named U.S. Apple—has rigorously defended the most dangerous pesticides at every turn.

We want grocery stores to do what government is incapable of doing: test and tell consumers *which* crops of food have *which* pesticides in them.

Will grocery stores say they can't afford it, citing their razor-thin profit margins? Sure they will, and it's a crock. If a small *nonprofit* group can spend tens of thousands of dollars each year on food testing, imagine what a multi-billion dollar chain like Safeway or Kroger could accomplish. And as soon as they even contemplated a test and tell system, the apple industry would begin to change. So would growers of other produce crops. They'd rapidly find ways to grow fruits and vegetables without the most dangerous chemicals. We'd get much purer produce at the same price.

That's what happened with Gerber Baby Foods a few years ago. When EWG tested baby foods for pesticides, Gerber listened and responded to consumer concerns our testing provoked. Gerber not just directed but *helped* its growers to slash pesticide use, and eliminate the highest risk compounds from their product line. The result? An extremely clean product. An infant would get far less pesticide from a jar of Gerber apple sauce than it would from a batch home-made from most bags of Washington state apples we tested. Why? Because as a result of its grower contracts and food monitoring, Gerber wouldn't buy most of the apples we tested.

So why should you?

Where is our government in all this? Snoring away at the wheel of the strongest regulatory vehicle they've ever had to get dangerous pesticides out of the food supply, particularly the foods little kids eat the most: the landmark Food Quality Protection Act of 1996. (Don't take our word for it. See the investigative expose of government pesticide regulation in the Oregonian last December at www.oregonlive.com/news/99/12/st120501.html). There isn't a single consumer or environmental group in the country that believes this government is going to stand up for consumers and against the pesticide lobby, based on performance to date.

But we think consumers will stand up.

Turn the page or go to www.foodnews.org. We'll show you how. It'll only take a minute.

KENNETH A. COOK
PRESIDENT

Gerber wouldn't buy most of the apples we tested. So why should you?

Executive Summary

Laboratory tests of apples grown in Washington State and purchased in Seattle supermarkets over the past five months found widespread insecticide contamination. Eight percent of apple samples had unsafe levels of a bug killer abruptly banned for use on apples and other foods in August, 1999 by federal authorities because of nervous system risks to children. Twenty percent of the samples had residues of another potent insecticide that Washington State's Department of Ecology has targeted for a ban because of health and environmental concerns. Several other highly toxic compounds were found, including chlorpyrifos (Dursban/Lorsban), a widely used roach and bug spray that, according to the U.S. EPA, is unsafe for children in all common indoor applications, even when used as directed (EPA 1999).

In all, 84 percent of the more than 125 pounds of Washington State apples sampled tested positive for pesticides in a battery of laboratory analyses. Half of the five-pound bags tested had more than one pesticide, and some had as many as four. Eight different pesticides were found in all. More extensive tests probably would have found additional chemicals, based on government studies.

The testing program was commissioned by the nonprofit Environmental Working Group, a public health watchdog organization, to help consumers and grocers respond to growing federal concerns about major apple pesticides and to help fill a three-year information gap in federal pesticide tests on apples.

Given the extent of the contamination, and the types and levels of pesticides detected, consumers should purchase certified organic apples this season if they wish to avoid exposure to chemicals that have raised safety concerns with federal regulators.

The government last published results of pesticide tests for apples in 1998, based on samples collected in 1996. The next round of apple test results, for samples taken this season, will not be available from the U.S. Department of Agriculture until mid-2001 or later—long after grocers have stocked and sold the current apple crop and consumers have eaten it.

Given the extent of the contamination, and the types and levels of pesticides detected, consumers should purchase certified organic apples this season if they wish to avoid exposure to chemicals that have raised safety concerns with federal regulators.

Washington State apple growers have done little to reduce insecticide contamination of their crop since 1996, when federal pesticide laws were overhauled to protect children.

The results indicate that Washington State apple growers have done little to reduce insecticide contamination of their crop since 1996, when federal pesticide laws were overhauled to protect children. Lab tests EWG commissioned closely match the contamination patterns found in government tests of apples grown five years ago.

Washington State authorities test apples and other foods for pesticides but do not publicize results for direct use by consumers. The state accounts for 60 percent of the U.S. apple market and the majority of the nation's fresh apple exports.

The tests indicate that consumers are being exposed to the banned pesticide, methyl parathion, and to another pesticide, Guthion, that was nearly banned in 1999. In the end, it was merely restricted after last minute concessions to chemical companies and farm groups. Guthion was found in 14 (56 percent) of the 25 bags of apples that EWG tested.

Detailed Findings

Independent testing commissioned by the Environmental Working Group found eight different pesticides in 21 out of 25 bags (84 percent) of Washington State apples purchased in Seattle supermarkets from November 1999 through January 2000.

Table 1. Pesticides were found on over 80 percent of Washington State apples

Apple Type	Packer	Store	Chemicals Detected
Golden Delicious	Domex Marketing	Thriftway	Azinphos-methyl (0.200), Methyl Parathion (0.020), Phosmet (0.020), Endosulfan (0.009),
Jonagold	Sage Marketing	Thriftway	Azinphos-methyl (0.040), Chlorpyrifos (0.040), Diphenylamine (0.230), Thiabendazole (0.070)
Red Delicious		Safeway	Azinphos-methyl (0.002), Diphenylamine (1.510), Thiabendazole (0.980), Endosulfan (0.040)
Golden Delicious*		Safeway	Azinphos-methyl (0.079), Chlorpyrifos (0.059), Methyl Parathion (0.005)
Granny Smith	Brewster Heights	QFC	Azinphos-methyl (0.007), Diphenylamine (8.900), Endosulfan (0.120)
Red Delicious	Sage Marketing	Thriftway	Diphenylamine (0.950), Thiabendazole (0.980), Endosulfan (0.050)
Fuji	Columbia Mktg	Thriftway	Diphenylamine (0.04), Thiabendazole (1.18), Captan (0.006)
Golden Delicious^	Columbia Mktg	QFC	Azinphos-methyl (0.060).Diphenylamine (1.5), Thiabendazole (0.98)
Akane^	Crow's Nest	Greenwood	Azinphos-methyl (0.050), Phosmet (0.180), Thiabendazole (1.3)
Gala		QFC	Azinphos-methyl (0.030), Thiabendazole (2.300)
Red Delicious		QFC	Phosmet (0.005), Thiabendazole (0.240)
Braeburn	Sage Marketing	Thriftway	Diphenylamine (0.260), Thiabendazole (0.990)
Golden Delicious		QFC	Endosulfan (0.017)
Fuji*		Safeway	Azinphos-methyl (0.012)
Jonagold*		Safeway	Phosmet (0.110)
Golden Delicious*		Safeway	Azinphos-methyl (0.086)
Golden Delicious^	Crow's Nest	Greenwood	Azinphos-methyl (0.070)
Red Delicious*		Safeway	Chlorpyrifos (0.037)
Golden Delicious^	NW Fruit & Produce	Safeway	Azinphos-methyl (0.050)
Fuji*		Safeway	Azinphos-methyl (0.030)
Fuji*		Safeway	Azinphos-methyl (0.023)
Fuji*		Safeway	
Red Delicious*		Safeway	
Gala*		Safeway	
Granny Smith^	Brewster Heights	Safeway	

Source: Environmental Working Group. Compiled from EWG Testing Data.
** - Samples were only tested for organophosphate pesticides.*
^ - Samples were only tested for orgnnophosphate and nitrogen pesticides.

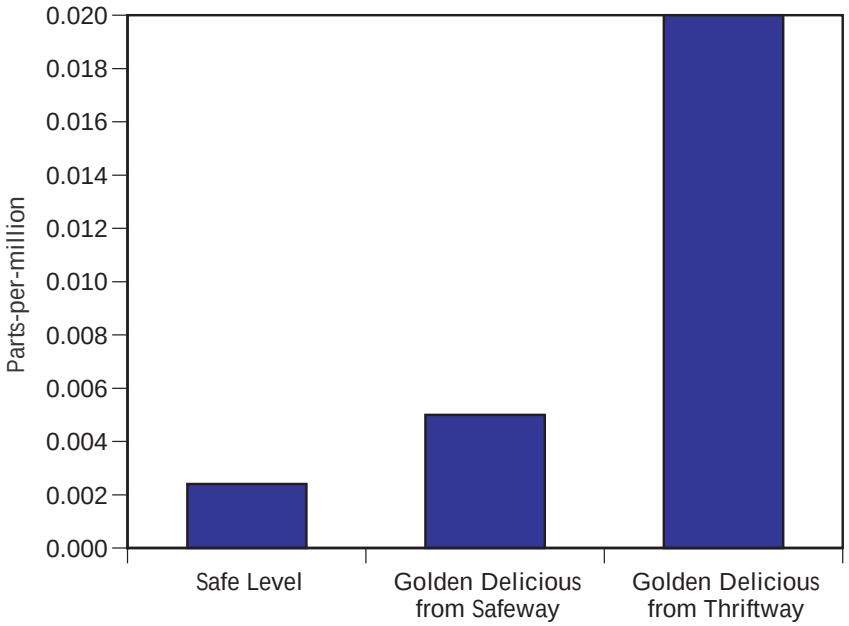
Seventeen (17) out of 25 bags (68 percent) were positive for highly toxic organophosphate (OP) insecticides, including 14 with azinphos-methyl (Guthion), two with methyl parathion, three chlorpyrifos, and four with phosmet (Table 1). In ten of the 25 samples that were more thoroughly tested, four other pesticides were found, including the probable human carcinogen captan, and the highly toxic DDT relative, endosulfan that was targeted for elimination by the Washington State Department of Ecology in 1998. In fact, half of the ten more thoroughly tested samples were contaminated with endosulfan.

Small children could easily be exposed to unsafe doses of pesticides by eating relatively small amounts of some of these apples. Two bags were so contaminated that less than one apple would expose an average 2-year-old to an unsafe dose of organophosphate insecticides, according to EPA standards (Figure 1). For three additional bags, the safety limit for a 2-year-old was exceeded by eating between one and two and a half apples over the course of a day. These calculations underestimate actual risk because they assume that the child is exposed to no other OP insecticides on that day. Because the entire bag of apples is tested together, these figures assume that the pesticides were evenly distributed on all the apples in the bag. In reality it is more likely that the methyl parathion was concentrated at even more dangerous levels in just a few apples in the bag.

In the long run, exposures to methyl parathion on children's foods will be eliminated as growers stop spraying the banned pesticide on their crops. Even then, however, exposure to organophosphate insecticides will not be anywhere near what the agency itself has defined as safe (EWG 1998, EWG 1999). Moreover, there is no reason to think that Guthion levels in apples and other fruits will be any lower next year than they were this year. Indeed they may be higher as growers apply more Guthion to make up for the loss of methyl parathion. Restrictions on Guthion production, per acre

Small children could easily be exposed to unsafe doses of pesticides by eating relatively small amounts of some of these apples.

Figure 1. One bag of apples purchased in January, 2000 was contaminated with nearly ten times EPA's 'safe' level of methyl parathion, a pesticide banned on children's food last year



Source: Environmental Working Group. Compiled from EWG Testing Data.
Note: The 'safe' level is the level at which the average 2-year-old could eat an apple without gettingan un acceptable dose according to EPA standards.

In the long run, exposures to methyl parathion on children's foods will be eliminated as growers stop spraying the pesticide on their crops.

use, and food residues are so weak that they will do nothing to prevent this perverse outcome. And the agency has yet to take any action to regulate another OP, chlorpyrifos, on apples, even as it declared it unsafe under all common home use scenarios in October 1999.

Recommendations

For Parents:

Parents should continue to feed their children plenty of fresh fruits and vegetables but avoid conventially-grown foods that contain relatively high levels of pesticides. Apples, peaches, pears, strawberries, and green beans typically have the highest levels of pesticides. Bananas, oranges, pineapples, most melons, and broccoli are typically lower in pesticides.

Even then, however, exposure to organophosphate insecticides will not be anywhere near what the agency itself has defined as safe

If your kids love apples, try to feed them certified organic apples, or low residue fruits that have been certified by Nutriclean or other independent, third party auditors.

For more information on pesticides and other contamination in foods, visit EWG's foodnews.org site (www.foodnews.org) for our latest pesticide test results and other information on how to shop your way to safer food.

For Supermarkets:

We call on all supermarkets to begin targeted pesticide testing programs, and to make the results immediately available to consumers. Shoppers have a right to know about pesticides in the foods they buy, and retailers are in the best position to provide this information.

Choice is important to consumers. We urge all supermarkets to stock organic and certified low residue produce that have been accredited by reputable, independent programs.

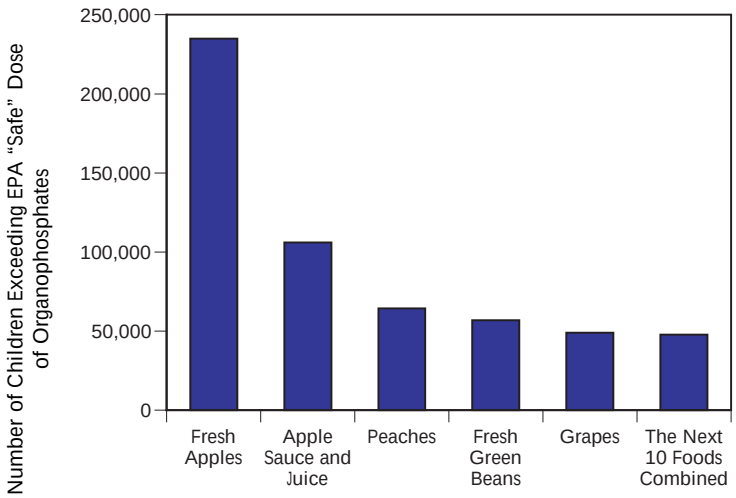
Bad Apples

The foods most frequently eaten by children, such as apples, are still contaminated with toxic pesticides at levels that pose a significant health risk to infants and children.

In 1993, the National Academy of Sciences published the landmark study, *Pesticides in the Diets of Infants and Children*, which concluded that existing laws were not adequate to protect children against the risk of pesticides in food and the environment. Largely in response to this report, the United States Congress unanimously passed the Food Quality Protection Act (FQPA), which for the first time required that infants and children be protected from all sources of exposure to pesticides. President Clinton signed the Act on August 3, 1996, calling it the "peace of mind" Act. More than three years after President Clinton's declaration, the government has yet to implement the full protections of the law for even one pesticide. The foods most frequently eaten by children, such as apples, are still contaminated with toxic pesticides at levels that pose a significant health risk to infants and children.

As part of its implementation of FQPA, the EPA identified organophosphate (OP) insecticides as the most dangerous class of pesticides in the food. Heavily

Figure 2. Apples and apple products present more risk from neurotoxic pesticides (OPs) than all other foods combined.



Source: Environmental Working Group. How 'bout them apples (Feb. 1998)

used in apple production, these bug killers were developed from World War II nerve gases. Our analyses show that about 600,000 children between the ages of one and five years eat an unsafe dose of OP insecticides each day (EWG 1998, EWG 1999). Apples account for the lion's share of this risk (Figure 2).

Table 2. 20 pesticides considered highly hazardous by the EPA are heavily sprayed on apples.

Pesticide	Percent of Crop Treated (1996)	Pesticide Type
Azinphos-methyl	82	Insecticide
Chlorpyrifos	74	Insecticide
Myclobutanil	39	Fungicide
Carbaryl	38	Insecticide
Captan	36	Fungicide
Mancozeb	32	Fungicide
Methyl parathion	30	Insecticide
Paraquat	26	Weed-killer
Benomyl	25	Fungicide
Endosulfan	20	Insecticide
Simazine	19	Weed-killer
Phosmet	19	Insecticide
Triflumizole	19	Fungicide
Methomyl	18	Insecticide
Oxymyl	18	Insecticide
Metiram	17	Fungicide
2,4-D	14	Weed-killer
Thiophanate-methyl	14	Fungicide
Malathion	12	Insecticide
Methoxychlor	12	Insecticide
Formetanate-HCL	9	Insecticide
Hexythiazox	9	Insecticide
Oryzalin	7	Weed-killer
Dimethoate	7	Insecticide
Permethrin	6	Insecticide
Triadimefon	6	Fungicide
Oxyfluorfen	4	Weed-killer
Diazinon	4	Insecticide
Terbacil	3	Weed-killer
Dicofol	3	Insecticide
Methidathion	2	Insecticide
Maneb	2	Fungicide
Thiram	2	Fungicide
Phosphamidon	1	Insecticide
Chlorothalonil	1	Fungicide
Zinc phosphide	1	Other

Source: Environmental Working Group. Compiled from U.S.D.A. National Agricultural Statistics Service, Survey of Agrichemical Usage 1997.

Infants and children are particularly vulnerable to OPs because their central nervous systems are still developing. In August, 1999, the EPA concluded, after years of scientific study, that children were being exposed to unsafe levels of two widely used OP insecticides, Guthion and methyl parathion.

On August 2, 1999, the EPA "restricted" the use of Guthion (azinphos-methyl) due to its potential to damage the brains and developing nervous systems of infants and young children. As discussed below, the restrictions have just about zero likelihood of reducing infant or child exposure to Guthion in food. Guthion is applied to 82 percent of the U.S. apple crop, and 91 percent of the apples grown in Washington State (USDA 1998).

On the same day, the EPA banned the use of methyl parathion on all foods consumed by children, effective January 2000. Prior to the ban, methyl parathion was applied to 30 percent of the nation's apples and 33 percent of the apples grown in Washington (USDA 1998).

In October 1999, the EPA found another widely used organophosphate, chlorpyrifos, was unsafe for children in all common home use applications. In spite of this finding, EPA

currently plans no action to restrict the use of chlorpyrifos in apple production, even as use on apples increased from 468,000 pounds in 1991 to 571,000 pounds in 1997 (USDA 1992, USDA 1998)[1].

The use of other toxic pesticides on apples is also increasing, even as the total number of orchard acres is decreasing. Application of EDBC fungicides, carcinogens that are poorly monitored in the food supply by the federal government, increased seven-fold, from a few hundred thousand pounds in 1991 to more than 1.4 million pounds in 1997. The use of methoxychlor, a potent hormone disrupter and DDT derivative, grew from virtually no usage in the beginning of the decade to 50,000 pounds in 1997. Overall, 36 different chemicals on EPA's top priority high-hazard list are sprayed on at least one percent of the U.S. apple crop (Table 2).

The total pesticide load on apples after washing and coring held steady from 1992 through 1995 and then increased sharply in 1996 (USDA 1997). There is no evidence that residues have decreased since that time. In 1995 and 96, USDA technicians found apple samples with up to 12 pesticides and breakdown products after being washed and cored. The health risks of these toxic mixtures of pesticides are neither regulated by the EPA, nor studied by the scientific community. The test results reported here show nearly identical pesticide residue patterns on this year's harvest of apples from Washington State.

Overall, 36 different chemicals on EPA's top priority high-hazard list are sprayed on at least one percent of the U.S. apple crop.

Endnotes:

1. We used data from the National Agricultural Statitistics Service's (NASS) surveys of agrichemical usage to track changes in pesticide use between 1991 and 1997. NASS did not survey the same states in both years, having sampled growers in Virginia and Arizona in 1991 and in California in 1997; therefore, we limited our comparison to the states that were surveyed in both years: Georgia, Michigan, New York, North Carolina, Oregon, Pennsylvania, South Carolina, and Washington. These state produce nearly 80 percent of the nation's apple crop.

Test, But Don't Tell

The apple industry has created a hazard for children by its profligate use of highly-toxic pesticides. As the EPA and the industry battle over what levels of pesticides on apples are safe for children, parents have no way of knowing which apples are heavily contaminated and which are not. As a result, they cannot make informed buying decisions other than purchasing organic or certified low-residue apples, which are not widely available to the public.

It is not that the government doesn't test apples for pesticides. They do. The problem is that they generally sit on the results for about two years before they release them to the public. And when the information is finally released, it is typically in unwieldy reports that are useless to parents and other consumers.

Even the best government testing program, USDA's Pesticide Data Program (PDP), lacks a usable turn-around time to help concerned parents to choose their children's diets. Started in 1991, the PDP tests thousands of food samples each year for pesticide residues, focusing on the foods that children most frequently eat. The program has been an immense resource for researchers and policy-makers and has enabled the EPA to pinpoint risks in its implementation of FQPA; however, it is not designed to give rapid results to the public. The last time that the program tested apples and published the results was in 1996, and USDA did not release a report with the results until February 1998. There have been no apple data published at all by the USDA since that time.

This delay can have unfortunate consequences. Although USDA researchers found an apple sample on January 23, 1996 with enough methyl parathion on it to give a child an unsafe dose with just one bite, those results were not released to the public for another 26 months—well after that year's crop was consumed. PDP researchers tested 530 bags of apples that year and found a total of 35 different residues on 99.6 percent of those samples. The apples in one bag had 10 pesticides plus two distinct by-products on them, more than any other food tested by the USDA.

Although PDP researchers found an apple sample on January 23, 1996 with enough methyl parathion on it to give a child an unsafe dose with just one bite, those results were not released to the public for another 26 months—well after that year's crop was consumed.

Apples were chosen because our very small testing budget limited us to one food, and because apples present the greatest pesticide risk to infants and children of any single food in the U.S. food supply.

Apples are so loaded with different pesticides that we could not, with existing funds, look for all the pesticides that are likely to be found on just this one crop.

EWG's Testing Initiative

In an attempt to give the public some timely information on pesticides in children's foods, EWG has begun a residue testing program that will provide up-to-date information to the public. The apple test results in this report are the first findings from this project. Future results will be posted even more quickly than these, on the world wide web, and distributed to the media.

This round of tests took a look at some of the pesticides found on apples grown in Washington State and sold in Seattle supermarkets. Apples were chosen because our very small testing budget limited us to one food, and because apples present the greatest pesticide risk to infants and children of any single food in the U.S. food supply. Indeed, apples are so loaded with different pesticides that we could not, with existing funds, look for all the pesticides that are likely to be found on just this one crop.

Twenty-five, five pound bags of apples were purchased in Seattle supermarkets in October 1999 and January 2000. The first 10 were tested only for organophosphate insecticides, the next five were tested for OPs and organonitrogens (ONs), and the last ten bags were tested for OPs, ONs, and organochlorines. We found:

- 84 percent of all samples (21 out of 25), were positive for one of eight different pesticides (Table 2). A sample is a slurry made from a five pound bag of apples.
- 17 out of 25 samples, 68 percent, had residues of organophosphate insecticides.
- 14 samples had residues of the OP Guthion and two of these also had residues methyl parathion. One of these apples was so contaminated that three bites (15 grams) would expose the average 2-year-old to more OP insecticides than deemed safe by the U.S. EPA. Another would overexpose a 2-year-old with just one third of an apple.
- Nine out of the 10 samples that were tested more thoroughly were positive for pesticides.
- Five of these had endosulfan on them, a toxic relative of DDT that was listed for elimination by the Washington State Department of Ecology in 1998. One had residues of captan, a fungicide classified as a probable human carcinogen by the U.S. EPA.

The names of individual apple brands and supermarkets were included to give consumers a snapshot of what out tests found; however, our sample size was too small to draw any conclusions regarding relative pesticide contamination between stores. QFC is not necessarily any better than Safeway when it comes to pesticide contamination on its produce and Thriftway is not necessarily any worse. In the coming months, EWG will work with supermarkets to develop and publish a policy regarding pesticides and will make that information available to the public.

Table 3. Pesticides were found on over 80 percent of Washington State apples

Apple Type	Packer	Store	Chemicals Detected
Golden Delicious	Domex Marketing	Thriftway	Azinphos-methyl (0.200), Methyl Parathion (0.020), Phosmet (0.020), Endosulfan (0.009),
Jonagold	Sage Marketing	Thriftway	Azinphos-methyl (0.040), Chlorpyrifos (0.040), Diphenylamine (0.230), Thiabendazole (0.070)
Red Delicious		Safeway	Azinphos-methyl (0.002), Diphenylamine (1.510), Thiabendazole (0.980), Endosulfan (0.040)
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Granny Smith	Brewster Heights	QFC	Azinphos-methyl (0.007), Diphenylamine (8.900), Endosulfan (0.120)
Red Delicious	Sage Marketing	Thriftway	Diphenylamine (0.950), Thiabendazole (0.980), Endosulfan (0.050)
Fuji	Columbia Mktg	Thriftway	Diphenylamine (0.04), Thiabendazole (1.18), Captan (0.006)
Golden Delicious^	Columbia Mktg	QFC	Azinphos-methyl (0.060).Diphenylamine (1.5), Thiabendazole (0.98)
Akane^	Crow's Nest	Greenwood	Azinphos-methyl (0.050), Phosmet (0.180), Thiabendazole (1.3)
Gala		QFC	Azinphos-methyl (0.030), Thiabendazole (2.300)
Red Delicious		QFC	Phosmet (0.005), Thiabendazole (0.240)
Braeburn	Sage Marketing	Thriftway	Diphenylamine (0.260), Thiabendazole (0.990)
Golden Delicious		QFC	Endosulfan (0.017)
Fuji*		Safeway	Azinphos-methyl (0.012)
Jonagold*		Safeway	Phosmet (0.110)
Golden Delicious*		Safeway	Azinphos-methyl (0.086)
Golden Delicious^	Crow's Nest	Greenwood	Azinphos-methyl (0.070)
Red Delicious*		Safeway	Chlorpyrifos (0.037)
Golden Delicious^	NW Fruit & Produce	Safeway	Azinphos-methyl (0.050)
Fuji*		Safeway	Azinphos-methyl (0.030)
Fuji*		Safeway	Azinphos-methyl (0.023)
Fuji*		Safeway	
Red Delicious*		Safeway	
Gala*		Safeway	
Granny Smith^	Brewster Heights	Safeway	

Source: Environmental Working Group. Compiled from EWG Testing Data.
** - Samples were only tested for organophosphate pesticides.*
^ - Samples were only tested for orgnnophosphate and nitrogen pesticides.

Faking it – EPA's Implementation of the Food Quality Protection Act

The insecticide found most often in Washington State apples is Guthion. This was the conclusion of five years of testing by the USDA Pesticide Data Program and it was confirmed by our test results. Indeed, the ubiquity of Guthion in apples was the principle reason that EPA initially proposed to ban the insecticide on this crop.

On March 19 1999, scientists at the EPA's Office of Pesticide Programs finished a study of the risks posed by Guthion. That study, like the one sponsored by the pesticide's manufacturer, concluded that Guthion use on food—especially apples—posed an unacceptable risk to children (Eiden 1999). Shortly therafter, the agency completed a study on another organophosphate, methyl parathion, that concluded that children were exposed to nine times the safe level of the pesticide. Under the Food Quality Protection Act (FQPA), the EPA was required to take action to reduce those risks. Methyl parathion was ultimately banned although it remains in apples to this day. Guthion largely escaped government action.

EWG analyses published in March 1999 estimated that 40,000 children between the ages of 1 and 5 eat an unsafe dose of Guthion each day. This estimate was based on the most recent government data on apple consumption and pesticide residues in food (EWG 1999a). The results of our supermarket testing program show that children face the same unacceptable risks today from Guthion, as before the EPA's decision. Worse, it is likely that EPA's so-called restrictions will do nothing in the future to lower levels of this insecticide in food.

Guthion is applied to 82 percent of the U.S. apple crop, and 91 percent of the apples grown in Washington State (USDA 1998). Recognizing what it called Guthion's "high" risks to children (USEPA 1999), the agency decided in the spring of 1999 to ban all uses of the insecticide on children's foods. But after intense pressure from the apple industry and their allies in the pesticide lobby, the EPA issued a final decision on Guthion that will do virtually nothing to protect children. (Walth 1999.)

EPA's so-called restrictions on Guthion will do nothing to lower levels of this insecticide in food.

EPA's Guthion decision ignored the cumulative risk from the 12 other OP insecticides that are routinely found in food.

Instead of banning Guthion on apples and other children's foods, the EPA:

1. Lowered the legal limit for Guthion on apples—the biggest risk-driver—from 2.0 to 1.5 parts-per-million

2. Lowered the maximum application rate from 6 to 4.5 pounds per acre

3. Increased the length of time between the last pesticide spraying and harvest from 7 to 21 days if the last application is more than 1 pound of Guthion per acre.

4. Set a maximum annual production level of 1.92 million pounds to keep farmers from increasing applications of Guthion in response to the loss of methyl parathion.

The action will do nothing to protect children because:

1. Lowering the legal limit from 2 to 1.5 ppm does not make Guthion on apples safe for children. Guthion at 1.5 ppm is five times the amount that a 2-year-old could safely eat in one day and is significantly higher than the real world Guthion levels on apples that prompted EPA "action" in the first place (Figure 3).

2. Reducing the maximum application rate from 6 to 4.5 pounds per acre will have no effect on actual use of Guthion. Nationally, apple farmers use an average of 2.4 pounds of Guthion per acre; farmers in Washington State use 2.77 pounds per acre.

3. The high 4.5 pounds per acre application rate ensures that lengthening the time between the last application and harvest will have little effect on actual residue levels. Bayer, the maker of Guthion, only agreed to accept the 21 day pre harvest interval after pressuring EPA to adopt high per acre poundage limits (Walth 1999).

4. The agency's production cap will have no effect on Guthion use in apples largely because the cap does not limit the amount of Guthion that can be used on individual crops. Apples are the top market for Guthion, and if it is needed, Guthion use on apples will increase at the expense of smaller crops like cherries and blueberries.

Chlorpyrifos: the risk from other OPs

As with all regulatory actions to date under FQPA, EPA's Guthion decision ignored the cumulative risk from the 12 other OP insecticides that are routinely found in food. Indeed,

it is only by ignoring these risks that the EPA was able to conclude that Agency restrictions on Guthion would make the pesticide "safe" for chlidren.

Twelve other organophosphate pesticides are commonly found on children's food (at least five others on apples alone). Under FQPA, the EPA is required to make sure that the combined exposure to all these OPs is safe for infants and children. In EPA parlance, the agency must leave room in the 'risk cup' for all of these chemicals when it sets the safe limits for individual pesticides like Guthion. The Agency's action, however, allowed Guthion to fill the entire risk cup by itself. Guthion, therefore, is only safe under the law, if exposure to all other OP pesticides is ignored.

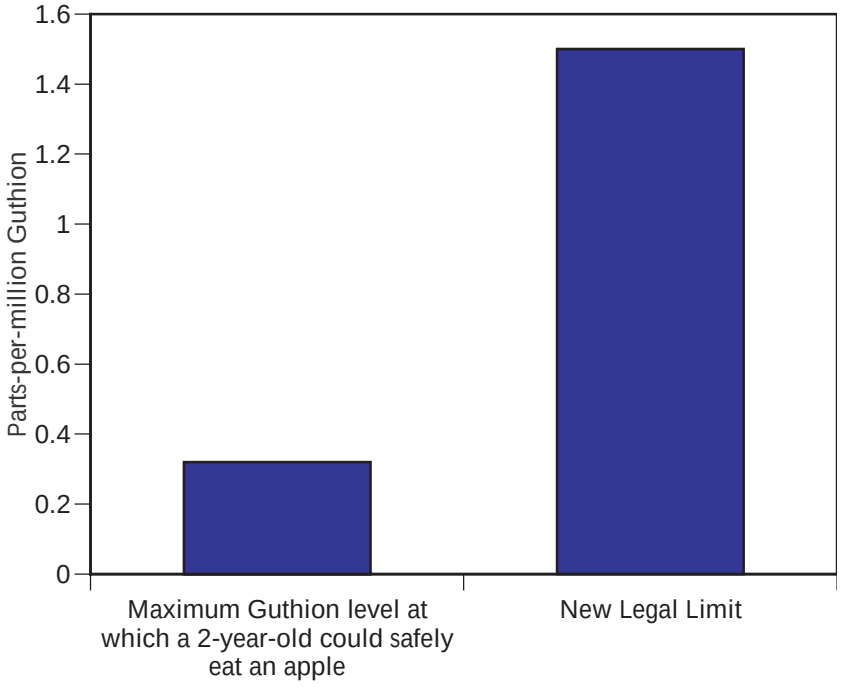
In reality, children are exposed to many other OPs each day. Chlorpyrifos, another OP insecticide and the most heavily used insecticide in the United States, provides a good example. Government studies show that 82 percent of American adults and 92 percent of children studied have traces of the chemical in their urine (Smegal 1999b). In October 1999, the EPA published a detailed risk assessment for chorpyrifos that found all common home applications of the insecticide to exceed safety margins for children (Smegal 1999a). Chlorpyrifos exposure is of particular concern because EPA and Dow studies on rats, rabbits and mice link the compound to problems with the blood cells, brain formation, nervous system development and reproductive ability.

The October EPA analysis also included an assessment of chlorpyrifos in food. Here the agency use the same flawed analysis that it used in the Guthion decision. By ignoring risks from Guthion and all other OPs, and by ignoring all non-food risks from chlorpyrifos itself, the agency concluded that chlorpyrifos's dietary risks to children age five and under were barely within safe exposure limits.

Of course in the real world, where children are exposed to

Twelve other organophosphate pesticides are commonly found on children's food (at least five others on apples alone).

Figure 3. The new legal limit for Guthion on apples is not safe for small children.



Source: Environmental WorkingGroup

Guthion, chlorpyrifos, methyl parathion and many other OP pesticides, sometimes on the same apple, the safety of exposure to individual pesticides from one source is not relevant to the overall risk faced by children.

Not to mention the fact that being barely safe by EPA standards is no guarantee of protection for small children. The EPA considers OP's like Guthion and chlorpyrifos safe if up to 20,000 children exceed federal limits each day, for each pesticide in food alone. This is like saying that the highways are safe if only a few people a day are driving drunk.

Recommendations

For Parents:

Parents should continue to feed their children plenty of fresh fruits and vegetables but avoid conventially-grown foods that contain relatively high levels of pesticides. Apples, peaches, pears, strawberries, and green beans typically have the highest levels of pesticides. Bananas, oranges, pineapples, most melons, and broccoli are typically lower in pesticides.

If your kids love apples, try to feed them certified organic apples, or low residue fruits that have been certified by Nutriclean or other independent, third party auditors.

For more information on pesticides and other contamination in foods, visit EWG's foodnews.org site (www.foodnews.org) for our latest pesticide test results and other information on how to shop your way to safer food.

For Supermarkets:

We call on all supermarkets to begin targeted pesticide testing programs, and to make the results immediately available to consumers. Shoppers have a right to know about pesticides in the foods they buy, and retailers are in the best position to provide this information.

Choice is also important to consumers. We urge all supermarkets to stock organic and certified low residue produce that have been accredited under Nutriclean or other reputable, independent programs.

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