WHAT’S ON MY FOOD?

Pesticide residues and human health

Lex Horan, Pesticide Action Network
Figure 4
Pesticide use in U.S. agriculture, 21 selected crops, 1960-2008

Million pounds of pesticide active ingredient

- Other Pesticides
- Fungicides
- Insecticides
- Herbicides
HOW ARE WE EXPOSED TO PESTICIDES IN FOOD?

- Mostly low levels
- Not one-at-a-time
- For kids: Timing as important as dose
USDA report says pesticide residues in food nothing to fear

BY CAREY GILLAM
Fri Dec 19, 2014 5:27pm EST

(Reuters) - More than half of food tested by the U.S. government for pesticide residues last year showed detectable levels of pesticides, though most were within levels the government considers to be safe, according to a report issued Friday by the U.S. Department of Agriculture.

The USDA looked at fresh and processed fruits and vegetables as well as infant formula, apple juice, and other products.
Multiple pesticides can interact to produce synergistic effects:

1+1 = more than 2
KIDS ARE ESPECIALLY VULNERABLE

- Pound for pound, children eat, breathe and drink more
- Bodies less able to detoxify
- Critical developmental windows – timing as important as dose
www.whatsonmyfood.org

A decoder ring for your food.
THE DATA

- Pesticide active ingredients + breakdown products = pesticide residues
- USDA Pesticide Data Program, cross-referenced with toxicological data from EPA
- Foods are prepared like they’re usually eaten
- Compares domestic, imported, conventional, organic
45 different pesticide residues were detected on strawberry samples. 16 are suspected hormone disruptors.

PESTICIDES :: A PUBLIC PROBLEM

Pesticides
...on our food, even after washing;
...in our bodies, for years;
...& in our environment, traveling many miles on wind, water and dust.

Whats On My Food? 2.5

Whats On My Food? now tracks bee-toxic pesticide residues alongside the ones with human health impacts.
APPLES

47 Pesticide Residues Found by the USDA Pesticide Data Program\textsuperscript{1,2,3}

Human Health Effects:
6 — Known or Probable Carcinogens\textsuperscript{4}
16 — Suspected Hormone Disruptors
5 — Neurotoxins
6 — Developmental or Reproductive Toxins

Environmental Effects:
11 — Honeybee Toxins\textsuperscript{5}

TOXICITY LEGEND

\begin{tabular}{|c|c|c|c|c|}
\hline
 & Carcinogens & Hormone Disruptors & Neurotoxins & Developmental or Reproductive Toxins & Bee Toxins \\
\hline
\textbf{KNOWN} & \textbf{KNOWN} & \textbf{SUSPECTED} & \textbf{PRESENT} & \textbf{PRESENT} & \textbf{HIGH} \\
\textbf{PROBABLE} & \textbf{PROBABLE} & \textbf{SUSPECTED} & \textbf{PRESENT} & \textbf{PRESENT} & \textbf{MODERATE} \\
\textbf{POSSIBLE} & \textbf{POSSIBLE} & \textbf{POSSIBLE} & \textbf{POSSIBLE} & \textbf{POSSIBLE} & \textbf{SLIGHT} \\
\hline
\end{tabular}
## Pesticide Residues Found in Apples:

<table>
<thead>
<tr>
<th>What Pesticide?</th>
<th>How Often is it Found?</th>
<th>How Conventional vs. Organic</th>
<th>How Toxicity</th>
<th>Other Foods with this Pesticide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylamine (DPA)</td>
<td>82.8%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
<tr>
<td>Thiabendazole</td>
<td>81.0%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
<tr>
<td>Pyrethrin</td>
<td>75.2%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
<tr>
<td>Chlorantraniliprole</td>
<td>41.2%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
<tr>
<td>Acetamiprid</td>
<td>28.7%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
<tr>
<td>Imidacloprid</td>
<td>20.2%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
</tbody>
</table>
Pyrimethanil Residue in Apples

Amounts of Pyrimethanil in 100 grams of Apples

<table>
<thead>
<tr>
<th>Origin</th>
<th>Type</th>
<th>% with Detectable Residue</th>
<th>Number of Samples</th>
<th>Average (µg) in 100g of Apples (about 3.5 ounces)</th>
<th>Maximum (µg) in 100g of Apples (about 3.5 ounces)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>Conventional</td>
<td>75.5%</td>
<td>666</td>
<td>36.3</td>
<td>1200.0</td>
</tr>
<tr>
<td>Imported</td>
<td>Conventional</td>
<td>74.1%</td>
<td>54</td>
<td>10.1</td>
<td>260.0</td>
</tr>
<tr>
<td>Domestic</td>
<td>Organic</td>
<td>66.7%</td>
<td>15</td>
<td>0.3</td>
<td>1.6</td>
</tr>
<tr>
<td>Imported</td>
<td>Organic</td>
<td>N/A</td>
<td>Insufficient Data</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Toxicity thresholds for Pyrimethanil:
These are EPA's levels of concern taken from their evaluations.

<table>
<thead>
<tr>
<th>Chronic RfD^{5} (μg/day)</th>
<th>Chronic PAD^{6} (μg/day)</th>
<th>Acute RfD^{7} (μg) for 70kg adult male (about 154 pounds)</th>
<th>Acute PAD^{8} (μg) for 70kg adult male (about 154 pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11900.0</td>
<td>3400.0</td>
<td>70000.0</td>
<td>20000.0</td>
</tr>
</tbody>
</table>

Other Foods with Pyrimethanil Residue.
Other Pesticide Residues on Apples.

Toxicity Information for Pyrimethanil

Note: Information for many chemicals is incomplete and may not be fully representative of effects on humans. Why?

Summary Toxicity Information

<table>
<thead>
<tr>
<th>PAN Bad Actor Chemical 1</th>
<th>Acute Toxicity 2</th>
<th>Carcinogen</th>
<th>Cholinesterase Inhibitor</th>
<th>Ground Water Contaminant</th>
<th>Developmental or Reproductive Toxin</th>
<th>Endocrine Disruptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Listed</td>
<td>Not Acutely Toxic</td>
<td>Possible</td>
<td>No</td>
<td>?</td>
<td>?</td>
<td>Suspected</td>
</tr>
</tbody>
</table>

Indicates high toxicity in the given toxicological category.
Indicates no available weight-of-evidence summary assessment. For additional information on toxicity from scientific journals or registration documents, see the "Additional Resources for Toxicity" section of the chemical detail page.

1. PAN Bad Actor are chemicals that are one or more of the following: highly acutely toxic, cholinesterase inhibitors, known/likely carcinogens, known groundwater pollutant or known reproductive or developmental toxicant. NOTE! Because there are no authoritative lists of Endocrine Disrupting (ED) chemicals, EDs are not yet considered PAN Bad Actor chemicals.

2. The acute toxicity reported on this page is of the pure chemical ingredient only and may not reflect the acute toxicity of individual pesticide products. To view acute toxicity of individual products, click on 'View Products' link in the Chemical Identification section above.
**BUTTER**

19 Pesticide Residues Found by the USDA Pesticide Data Program

### Human Health Effects:
- 5 — Known or Probable Carcinogens
- 10 — Suspected Hormone Disruptors
- 2 — Neurotoxins
- 5 — Developmental or Reproductive Toxins

### Environmental Effects:
- 8 — Honeybee Toxins

### TOXICITY LEGEND
- Carcinogens: Known, Suspected, Probable, Possible
- Hormone Disruptors: Present, High, Moderate
- Neurotoxins: Present, Moderate
- Developmental or Reproductive Toxins: Present, Moderate
- Bee Toxins: High, Moderate, Slight

### Pesticide Residues Found in Butter:

<table>
<thead>
<tr>
<th>What Pesticide?</th>
<th>How Often is it Found?</th>
<th>Conventional vs. Organic</th>
<th>Toxicity</th>
<th>Other Foods with this Pesticide</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDE p,p'</td>
<td>78.5%</td>
<td>Conventional vs. Organic</td>
<td></td>
<td>Other Foods</td>
</tr>
</tbody>
</table>
Frontline communities “triple whammy:” exposed to pesticides in air, water and on food
- Rural communities
- Farm families
- Farmworkers
- Native communities
WHAT DOES THIS HAVE TO DO WITH POLLINATORS?

- Broken regulatory process
- Emerging science: human health harms of neonicotinoids
- The pesticide treadmill
We need policy change to transition our food & farming system away from chemical-intensive practices.
Support GMO labeling:  
http://www.righttoknowmn.org/

Support a restriction or a moratorium on neonicotinoid pesticides

- Contact your State Senator & Representative
- Contact Minnesota Department of Agriculture:
  - Matthew.Wohlman@state.mn.us, 651.201.6551

Start a conversation in your community!

Don’t know who your legislators are?  
Google “MN who represents me”
OTHER RESOURCES

- What’s On My Food? :: www.whatsonmyfood.org
- GroundTruth Blog :: www.panna.org/blog
- Pesticide database :: www.pesticideinfo.org
THANK YOU!

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