



Art Drysdale

- Articles
- Background
- Canadian Horticultural Personalities
- Commentaries
- Art's Garden
- Winston
- My BC Adventure (2002)
- My BC Adventure (2003)

Is it yeah or nay to pesticides, and natural vs. synthetic



Dr. Bruce Ames

"The effort to eliminate synthetic pesticides because of unsubstantiated fears about residues in food will make fruits and vegetables more expensive, decrease consumption, and thus increase cancer rates. The levels of synthetic pesticide residues are trivial in comparison to natural chemicals, and thus their potential for cancer

causation is extremely low." That's a quote from Bruce Ames.

In a paper entitled "Pollution, Pesticides and Cancer: Misconceptions," researchers Bruce Ames and Lois Gold said pesticide regulatory policies that seek to eliminate minuscule levels of synthetic chemicals are unnecessarily expensive and driven by a series of scientific misconceptions. The paper was delivered to the American Chemical Society in July 1997.

As far back as the 1970s, Bruce Ames was the environmentalists' hero. As inventor of the Ames test (which allows scientists to test chemicals to see whether they cause mutations in bacteria and perhaps cancer in humans), his work led to the banning of such synthetic chemicals as a flame-retardant called Tris that was used in children's pyjamas. I first became aware of him in the late 80s. In the January/February 1988 issue of *Hippocrates* magazine, science writer John Tierney, appropriately described him: "He has a quiet, kindly tone of authority as he patiently explains why things are the way they are.... He sounds so sensible, which is one reason he made such a good witness for the environmentalists in the 1970s."

Today, Bruce Ames, professor of biochemistry and molecular biology at the University of California at Berkeley, stands on the other side of the chemical-ban debate. In 1990, he spoke out against California's Proposition 128, which would have banned many pesticides. The best way to prevent cancer believes Ames, is to "eat your veggies."

Bruce Ames says that it isn't that we needn't worry about man-made chemicals causing cancer, but that natural carcinogens are far more common, and the consensus is that we shouldn't worry about them at all. Why the difference?

What people should have thought about, but didn't, is all the chemicals in the natural world. We seemed to get it in our heads (and it is still very much the case with many so-called environmentally conscious gardeners!) that, if it's man-made, somehow, it's potentially dangerous, but if it's natural, it isn't. And according to Bruce Ames, that does not really fit in with what is generally known about toxicology. "When we understand how animals are resistant to chemicals, the mechanisms are all independent of whether it's natural or synthetic. And in fact,

when you look at natural chemicals, half of those tested come out positive.”

“Almost all the world is natural chemicals, so it really makes you rethink everything. A cup of coffee is filled with chemicals. They’ve identified a thousand chemicals in a cup of coffee. But we only found 22 that have been tested in animal cancer tests out of this thousand. And of those, 17 are carcinogens. There are ten milligrams of known carcinogens in a cup of coffee and that’s more carcinogens than you’re likely to get from pesticide residues for a year!”

Published in 1996, the book *Our Stolen Future* is, to say the least, controversial. In his introduction, US vice president Al Gore compared it to Rachel Carson’s *Silent Spring*. Bruce Ames saw it differently. Here’s just one comment: “There is no risk-free world and resources are limited; therefore, society must distinguish between significant and insignificant risks in order to save the most lives. Putting resources into minimizing minuscule exposures to synthetic substances, such as pesticide residues, while ignoring the natural world, can also harm human health by having adverse side effects which create more risk. For example, adequate consumption of fruits and vegetables plays a major role in lowering disease rates; therefore if banning pesticides because of tiny hypothetical hazards of residues, increases costs (organic food is very expensive), it harms public health.

Since Bruce Ames’ findings and writings support the use of synthetic pesticides (the contrary position from what he took in the 70s), one might easily think that he is widely supported by the chemical companies for his research. That is not the case. He steadfastly refuses to accept any money from the chemical industry, or anything disguised as coming from the industry. If he accepts a speaking assignment from a chemical company, he insists the honorarium be sent to a charity. All of his research money comes from government, which field he describes as being fiercely competitive.

While environmental activists are suspicious of him, even critics generally admit he has always done good science. And, now he is suspicious of a lot of the activists because he thinks they are not good problem solvers. “If you push in the wrong direction, then you’re counterproductive.”

Art C. Drysdale
6 Nesbitt Drive
Toronto, ON M4W 2G3
Phone: 416-968-5910

