



Uprooting agricultural myths and junk science

[Dan Woolley](#)

Published on March 05, 2015



© (Photo: Dan Woolley)

Dr. Joe Schwarcz.

Quacks cloak themselves in science

“The quacks these days might not be so easy to recognize. They cloak themselves in science... it is getting harder and harder to dispel the bullshit. It piles up... ”

Dr. Joe Schwarcz took aim at the environmental activists and advocates who attack farming practices and food production in presentations to the Nova Scotia Federation of Agriculture and the Agricultural Alliance of New Brunswick’s annual meetings.

Dr. Schwarcz is the director of McGill University’s Office of Science and Society. The office’s objective is to disseminate accurate information from scientific research that has been misreported from stories that appeared on the web, in the media or scientific journals that have been over-hyped, misinterpreted or poorly researched.

“There is so much scientific illiteracy out there you can sell almost anything.” As an example, Dr. Schwarcz observed that a person cannot change the pH of their blood by drinking alkaline water. Yet, someone has marketed a \$4,000 machine to produce alkaline water to alter blood pH.

“The word chemical these days is associated with fear. Chemicals are not to be feared: nor, are they to be worshiped. If you are buying a chemical-free product; you are not getting a very good deal. Everything in life is made of chemicals. Life itself is a chemical interaction within our bodies.”

Dr. Schwarcz stated that 99.9 per cent of chemicals naturally occur and many of them are toxic. “We also excrete in our urine over 3,000 chemical compounds.”

An apple has numerous chemical compounds, including acetone, formaldehyde and furans; however, they are in very small amounts. Only the size of the dose makes the poison, he said. “If you take two aspirin your headache will go away. If you swallow a whole bottle of aspirin, you will go away.”

A cup of coffee contains about 10 mgs of known and suspected carcinogens, but it also contains cancer-fighting anti-oxidants. Dr. Schwarcz noted there are more natural pesticides in the environment than there are synthetic pesticide residues, natural pesticides that evolved to provide pest protection for plants.

Pesticides are potentially dangerous and toxic, he admitted. There are many places in the world where they are inappropriately used and applied. The World Health Organization estimates there are three million pesticide poisonings, worldwide, every year.

There are pesticides, synthetic and natural, that will also trigger Parkinson’s disease, but “we don’t ban peanuts because some people may react to them.”

Dr. Schwarcz conceded that chronic health effects of pesticide exposure are difficult to monitor. He spoke about Colony collapse disorder: “I have been following this for 10 years and I cannot tell you what causes this. It could be mites. It could be neonicotinoids or climatic conditions.”

The chemicals in our bodies interact and our bodies react to everything we eat.

Dr. Schwarcz wasn't surprised that many people have shifted to consume organic produce because of their fear of agricultural chemicals. But there are dozens of chemicals used in organic agriculture, and not all of them are safe, he said.

Conventional agriculture does use more pesticides, but "the argument is can you feed the world with organic agriculture? You can't."

Apples can be exposed to up to 36 pesticides, but it is fear mongering to suggest growers randomly spray their orchards with pesticides.

He said anti-spray activists never stipulate what volume of spray is too much. "If you were told there was one needle in a haystack in the world; would you be stopped from a roll in the hay? "No, you would weigh the benefits: versus the risks."

The United State Food and Drug Administration and the Canadian Pest Management Regulatory Agency both monitor the pesticide amounts in food. But by leaving these amounts out of in anything they write, environmentalist can frighten people, Dr. Schwarcz stated. "These environmental activists are an industry and they sell fear."

He also described "a pseudo-battle" between the proponents of organic and conventional agriculture, instead of what should be the best way to raise food products.

Integrated Pest Management is a food production pathway as GMOs are another pathway. He said one activist's argument is that chemical fertilizers should be banned because they contain ammonium nitrate—an ingredient found also in explosive weapons of mass destruction, therefore, fertilizer comes from a weapon of war.

Activists have also claimed GMOs cause autism, but correlation is not causation, Schwarcz said. "It is very easy to frighten people by using correlation and not show causation."

Organophosphate is less toxic than caffeine, salt or Aspirin, yet some activists have linked toxicity in wheat to the use of glyphosate and quote an expert from MIT who is a computer scientist; but not an organic chemist. “This is junk science.”

Dr. Schwarcz noted as soon as glyphosate was introduced it was realized it would have a limited period of efficacy because of increased pesticide resistance.

“The biggest problem we have with GMOs is in the politics and marketing.” GMO Golden Rice addresses vitamin-A deficiency and a bowl of Golden Rice can provide up 60 per cent of the required daily vitamin A intake for child of six to eight years old.

Potatoes also received the BT gene. But they did not sell well as fears of GMOs stopped McDonald’s from buying the new GMO strain, despite the fact there was no threat to human health. In the U.S. up to 40-million lbs. of potatoes could be saved from spoilage annually by using the Innate GMO potato.

Dr. Schwarcz believes that academics in science have a moral and professional duty to pursue GMO use to feed the world. “Every 36 seconds someone dies from hunger in the world. Since I started talking here today more than 1,000 people have died. GMO is an important tool to feed the world, but it is not the only one.

“We eat better today than we have ever before. Two per cent of the population, farmers, have achieved this with the help of science.”