

## Awash in Pesticides

Future historians will be amazed by our distorted sense of proportion. How could intelligent beings seek to control a few unwanted species by a method that contaminated the entire environment and brought the threat of disease and death even to their own kind?

— Rachel Carson, *Silent Spring*, 1962

In the early 1950s, a serious outbreak of malaria in Borneo spurred the World Health Organization (WHO) to spray huge quantities of dichlorodiphenyl-trichloroethane (DDT) to kill mosquitoes carrying the disease. The mosquitoes died and malaria declined, but then came a surprising domino effect. The thatched roofs of local houses caved in because the DDT also wiped out a parasitic wasp that controlled thatch-eating caterpillars. Then DDT-poisoned insects were eaten by lizards, which were in turn consumed by cats. When the cats died, rats flourished, and humans were soon threatened by typhus and plague. To cope with the rats, WHO parachuted 14,000 live cats into Borneo.<sup>1</sup>



SILVIA JANSEN, DREAMSTIME.COM

Much of the concern about pesticides focuses on residues left on foods, but another major concern is the higher rate of some cancers experienced by farmers and farm workers using chemical sprays.

The story of Operation Cat Drop vividly illustrates how *not* taking into account the remarkable interconnectedness of nature can trigger dire outcomes.

During the early decades of the 20<sup>th</sup> century, tens of millions of humans died from malaria, yellow fever and typhus, including many soldiers. When the Swiss chemist Paul Müller discovered in 1939 that DDT could cheaply and effectively kill insects carrying infectious diseases, it was celebrated around the world as “miraculous.” Many other synthetic pesticides created in the 1940s were the by-products of research to develop deadly chemical weapons.

After World War II, the use of DDT and other new pesticides multiplied exponentially, including a whole range of household and agricultural products. Practically everything was sprayed: forests, wetlands, lawns, parks, campgrounds, schools, hospitals, ships, aircraft, entire cities and crops of all kinds. “DDT is good for me-e-e” was a popular jingle in the late 1940s and early 50s.

Then came the domino effect, not as fast and furious as in Borneo, but serious indeed. In 1962 Rachel Carson documented the devastation to wildlife in her bestseller *Silent Spring*, and scientists since have gradually pieced together the full range of problems associated with pesticide use:

- The development of pesticide-resistant insects that survive the most poisonous assaults and pass on their genes to future generations.
- The persistence of many pesticides in the environment and long-distance transport to remote locations, such as the Arctic.

- The accumulation of pesticide traces in human, animal and plant tissue.
- The increased vulnerability of fetuses, infants, young adults and people who are genetically susceptible.
- The detection of many routes of exposure including food, water, air and soil.<sup>2</sup>
- The ability of many pesticides to mimic hormones in wildlife and humans, causing health effects at minute doses.

In 2004 the Ontario College of Family Physicians released a landmark pesticide literature review, after scrutinizing more than 12,500 studies conducted from 1990 to 2003. The review concluded that there is “consistent evidence of the health risks to patients with exposure to pesticides,” naming brain cancer, prostate cancer, kidney cancer, pancreatic cancer and leukemia among a broad range of negative health effects.<sup>3</sup>

The physicians’ study also found consistent links between parents’ occupational exposure to several agricultural pesticides and effects on the growing fetus, ranging from damage to death.<sup>4</sup>

The International Agency for Research on Cancer (IARC) has identified over 45 pesticides as potential or known carcinogens. Almost half of these are still registered and in common use in the US and Canada, including the herbicide atrazine; the insecticides dichlorvos, dicofol and lindane; and the fungicides captan, pentachlorophenol and creosote.<sup>5</sup>

Despite the continuing obsession with dandelion-free lawns, and agriculture’s ongoing

addiction to petrochemical pesticides and fertilizers, there are several encouraging signs:

- Increased public awareness about the links between toxic substances and cancer.
- A growing movement to prohibit the cosmetic use of pesticides, including Quebec’s 2006 province-wide ban.
- The exploding consumer demand for organic food.

**Pesticide use increases:** In 2004 a surge in the world-wide pesticide market led to record sales of \$32 billion. This reflected a rise of 4.6% after inflation, the largest single-year growth for 10 years.<sup>6</sup> The main beneficiaries were the six multinational corporations that control approximately 80% of the agrochemical market — Bayer, Syngenta, BASF, Dow, Monsanto and DuPont.<sup>7</sup>

- *How Pesticides Work:* [www.epa.nsw.gov.au/envirom/pesthwwrk.htm](http://www.epa.nsw.gov.au/envirom/pesthwwrk.htm)
- *Lawn and Garden Pesticides: Reducing Harm* (10 min. video): [www.cape.ca](http://www.cape.ca)
- Ontario College of Family Physicians *Pesticides Literature Review*: [www.ocfp.on.ca](http://www.ocfp.on.ca) search for “Environment & Health”
- *Our Children’s Toxic Legacy: How Science and Law Fail to Protect Us from Pesticides*, by John Wargo, Yale University Press, 1998
- *Pesticides and Human Health*: [www.panna.org/campaigns/docs/Drift/PSR\\_PcidesHumanHlth.pdf](http://www.panna.org/campaigns/docs/Drift/PSR_PcidesHumanHlth.pdf)