



## Friend or foe

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In 1962, Rachel Carson, an American biologist, wrote a ground-breaking book, *Silent Spring*, in which she challenged the indiscriminate use of pesticides.<sup>1</sup> She emphasized that she was not against the use of pesticides *per se*, but was concerned about their widespread use, particularly because their potential was unknown.<sup>2</sup> Her writings touched off a debate that has not been settled to this day.

In 1991, Hudson, Que, a small town just off the Island of Montreal, passed a by-law that restricted the use of pesticides for cosmetic purposes. This decision was challenged at the provincial level by several lawn-care companies before being taken to the Supreme Court of Canada. In 2001, the Supreme Court of Canada upheld the power of municipal governments to restrict the use of pesticides within their boundaries. Since that decision, many other municipalities have followed Hudson's lead, yet not all.

Why would a municipality allow the spraying of pesticides for cosmetic purposes? Is the evidence unclear? In this issue, Bassil, Sanborn, and colleagues systematically review the literature on the cancer and non-cancer health effects of pesticides (page 1705 and page 1713). Because it is unethical to conduct classic randomized controlled trials on the effects of pesticides on humans, the quality of studies is variable, and most are cohort and case-control studies. The systematic reviews, however, found associations between pesticide use and some cancers and other non-cancer health effects, such as neurologic effects, reproductive effects, and genotoxicity. The authors conclude that physicians have a dual role in educating patients about the risks of pesticide exposure and reducing the risk of exposure in the community by advocating for restrictions on the cosmetic use of pesticides.

Is there a role for the use of pesticides? Some activists would say that there is never a situation in which pesticides should be used. Others would argue that in certain circumstances, pesticides might be an appropriate choice. Dichlorodiphenyltrichloroethane (DDT) is a good example of this controversy. Following the publication of *Silent Spring*, there was a growing concern about the effects of DDT in particular. The use of DDT was eventually banned in many countries, although DDT is an excellent tool for the eradication of mosquitoes, the malaria vector. The World Health Organization (WHO) gradually reduced the use of DDT in their malaria prevention programs, with a key report in 2001 outlining an action plan for the reduction of DDT use.<sup>3</sup> The report was optimistic about other options for preventing malaria, but did acknowledge that there were not many effective substitutes available for DDT, especially in the short-term. The report called for research into less toxic ways of controlling and eliminating malaria.

In 2006, the WHO reversed its position on DDT in a technical report on vector control in malaria.<sup>4</sup> The report outlined a multifaceted approach to the problem including the use of insecticide-treated nets for sleeping and the use of DDT for indoor residual spraying. Each year, there are more than 350 million cases of malaria and more than a million people die of malaria.<sup>5</sup> A serious disease that requires a serious solution—now.

Until a less toxic, effective alternative to DDT is found, it can be argued that it is unethical to let a million people die each year of a disease that we have the tools to prevent, even though there might be substantial long-term consequences to the use of DDT.

A concern shared by some is that the WHO has taken the "easy way out," without exploring more difficult, more time-consuming, or more costly alternatives to the use of DDT. Another concern is that research into alternatives to DDT might stagnate because of this recent decision. Others point out that the WHO is advocating the use of a pesticide *inside* homes in Africa and other less developed areas of the world that most of us would not allow *near* our homes and families. So, the controversy continues.

There might be a role for pesticides in disease prevention, but what about cosmetic use? In the play *A Man for All Seasons*, Sir Thomas More is being tried for treason because he disagrees with King Henry VIII on the matter of King Henry's divorce of Catherine of Aragon and remarriage to Anne Boleyn. Richard Rich commits perjury during the trial in order to gain the position of Attorney General of Wales, and thus helps convict More. Sir Thomas More questions Rich, "Why, Richard, it profits a man nothing to give his soul for the whole world ... but for Wales?"<sup>6</sup>

What are we willing to trade for a green lawn? 

### References

- 1 Carson R. *Silent Spring*. Boston, MA: Houghton Mifflin; 1962.
- 2 Leonard JN. Obituary: Rachel Carson dies of cancer; "Silent Spring" author was 56. *New York Times* 1964 April 15. Available from: <http://www.nytimes.com/learning/general/onthisday/bday/0527.htm>. Accessed 2007 September 10.
- 3 World Health Organization Sustainable Development and Healthy Environments. *Action plan for the reduction of reliance on DDT in disease vector control*. Geneva, Switz: World Health Organization; 2001. Available from: [http://www.who.int/water\\_sanitation\\_health/resources/ddt.pdf](http://www.who.int/water_sanitation_health/resources/ddt.pdf). Accessed 2007 September 10.
- 4 WHO Study Group on Malaria Vector Control and Personal Protection. *Malaria vector control and personal protection*. WHO Technical Report Series 936. Geneva, Switz: World Health Organization; 2006. Available from: <http://www.who.int/malaria/docs/WHO-TRS-936s.pdf>. Accessed 2007 September 10.
- 5 Global Malaria Programme. *Indoor residual spraying: use of indoor residual spraying for scaling up global malaria control and elimination*. Geneva, Switz: World Health Organization; 2006. Available from: <http://malaria.who.int/docs/IRS-position.pdf>. Accessed 2007 September 10.
- 6 Bolt R. *A man for all seasons: a play in two acts*. New York, NY: Vintage Books; 1962.



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