

“Silent Spring”: The Reckless Use of Pesticides in Modern Agriculture

Forgotten Legacy: fifty years after ‘Silent Spring’

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This year (2012) is the fiftieth anniversary of the publication of Rachel Carson’s seminal work ‘Silent Spring’, published first in the USA in 1962. This was the first book of its kind – an outspoken, powerfully argued and well researched condemnation of the reckless use of pesticides in modern agriculture, in urban and rural pest control and in and around the home.

At the time of its publication there was virtually no environmental movement. Conservation, its precursor was a minority interest and not taken seriously by governments or the public. However, the publication of ‘Silent Spring’ changed both public and government awareness of one of the most serious threats to both man and the environment that we rely on.

Initially, the book and its author were ridiculed by the press at the behest of the chemical manufacturers and the book’s findings were largely ignored or derided by government and major institutions such as the American Medical Association. Despite initial setbacks, the book sold incredibly well all over the world, so much so that it eventually gained huge media attention. By the time Carson died from breast cancer, in 1964, the book had created a legacy that would endure long after her death.

Former American Vice-President described ‘Silent Spring’ as ‘the beginning of the modern environmental movement’ and no-doubt she would have been delighted to see the impact of her work leading to the banning in USA and Europe of well known carcinogenic pesticides such as DDT. However, one must wonder if she would be so pleased by the progress that has been made in the decades following the publication of what might be regarded as the most powerful indictment of misuse and negligence in the use and regulation of modern technology.

The orthodoxy of the time was based on adoption of ‘chemical control’ as a means of controlling the natural world and solving any perceived problems arising from its failure to behave in the desired way. Since the 1940’s when chemical controls derived from the military became fashionable, alternatives such as ‘biological control’ were largely abandoned, at least until the effect of ‘Silent Spring’ began to be felt.

Thanks to Carson’s work and subsequent research and regulation chemical manufacturers have been forced to remove highly toxic pesticides from sale and replace them with safer broad-spectrum chemicals and selective chemicals. Although progress has been made it appears, from even a cursory investigation, that the world is still beset with a dangerous and worldwide problem relating to the use of pesticides. It would be nice to believe that her job was done, mission complete, and that there is no longer cause for concern or outrage.

The sad truth could not be more different.

It is true that in Europe and North America standards for pollution of the environment from insecticides, herbicides, fungicides, rodenticides and other sources have been greatly improved in the last fifty years, however according to official figures (such as given by the EPA in America) billions of pounds of such products are used each year. Individually these may not be specified as particularly dangerous, however evidence shows that when multiple products are applied or products combine in the soil, water-table or water courses the toxicity can be increased by many multiples. One such example is the organo phosphate Malathion, which has been used for decades and alone can be dealt with by the human liver. Unfortunately when combined with other chemicals, either deliberately or by chance it can become extremely dangerous, it is also potentially dangerous if ingested by those with an impaired liver. Despite these proven problems, in excess of 20 million pounds has been used in the USA annually over the last decade.

The combined effect of multiple products on insects, mammals, fish and indeed humans can be catastrophic - potentially causing cancer, nerve damage and even death. This in itself is rather worrying given that large quantities of pesticides enter the 'food chain' every year, ultimately ending up on our dinner plates or in drinking water.

What is more worrying still is the situation in the so called 'developing world'. In Africa there is a chronic problem of poorly stored or poorly disposed of chemicals that are obsolete. Chemicals such as DDT, banned in Europe and America since the 60s were sold in Africa (and other places) for a much longer period of time but after they were banned they continued to be used, were stored in unsuitable conditions that allowed seepage or were disposed of in ways that allowed soil and water to be contaminated.

Belatedly, in 2005 a programme was begun to clean up these obsolete pesticides from Africa, which is expected to take 15 years and cost about 250 million US dollars. Meanwhile this dangerous stockpile continues to poison land and water, having a hidden but terrible effect on both wildlife and humans alike.

Even where more modern chemicals are used, there is an appalling lack of understanding of safety procedures with workers using incorrect dosages, handling undiluted products, failing to use personal protection equipment (PPE) when applying products due to either ignorance or lack of money. The consequence of the stockpile of old products and the reckless use of current products is an enormous cost to the African continent in both financial and health terms, which has been highlighted by the Pesticide Action Network.

Moving on to India, the situation there in the last decade has been equally dire - researchers at the Centre for Science and Environment have found huge levels of dangerous pesticides present in the blood samples of not just agricultural workers but the general rural population in areas where pesticides are heavily used. For example, in Punjab state, which is famous for its agriculture, massive levels of organochlorine pesticides in humans is accompanied by worryingly high cancer rates among those exposed. Not only is this taking its toll on the human population, other organisms (fish and mammals especially) are vulnerable to damage or death at the hands of pesticides, which is devastating for the environment and local economies.

In China there have been ongoing problems with safety in agricultural products, leading to

new regulations being drafted in 2011 to deal with the effects of chemical misuse. Previous regulations, issued in 1997, have proven to be insufficient to prevent public safety scandals due to dangerous levels of pesticides in food. This problem has a direct effect on the Chinese environment, its animal and human population with serious poisoning or even deaths.

In 2011 approximately 1.3 million tons of pesticides were used annually, many of which are proven highly toxic throughout the food chain, however ten of the most dangerous have now been banned. In 2009 Greenpeace tested 50 fruit and vegetable samples in an independent laboratory and found that only 5 samples did not contain pesticides, multiple types were found in the rest.

As with both India and Africa, China has a catastrophic problem brought about by poor regulation, misuse and general ignorance. This problem, in developing countries all over the world, is exacerbated by the global economy - a blind eye often being turned while cheap, but sub-standard, food products are sold all over the world.

It would be understandable for a European or American to say that pollution in Africa, South America, Asia etc is not our problem. However, when some or much of most countries' food arriving from abroad is laced with a hidden cocktail of poisons this becomes everyone's problem.

What is more frightening still is the tendency of chlorinated hydrocarbons to accumulate over time in the fatty tissues of animals, humans included. This means that over a long period of time dangerous levels of pesticides and other related chemicals can build up in the body, possibly eventually leading to infertility, poisoning or cancer. Often illness will not manifest itself for years, but once a critical level has built up in the body of a human (or animal) it can lead to a total collapse of the immune system, nervous system or raging cancer that kills with great speed.

It is well known that levels of cancer, nervous disease and infertility have increased dramatically over the last century, in the latter half especially. Is this just co-incidence or is there a correlation between poor health and the prevalence of chemical controls in modern agriculture?

Far from disappearing, the use of pesticides and the appearance of their side-effects has now become a world-wide problem. Rachel Carson's dire warning fifty years ago set alarm bells ringing in the 'western' economies but profiteering and negligence has enabled these problems to be transferred to the rest of the world to such an extent that the entire planet is now becoming poisoned by our stupidity and greed.

Furthermore, chemical control has proven to be only effective in the short term, requiring greater quantities over time or new variants in order to overcome the development of genetic resistance, particularly in insects. Biological controls, apart from being much safer, have been proven to be effective in pest control both in the short and long term. Given this indisputable fact, it makes no sense to allow widespread and careless use of chemical controls when the cost to humanity and all life far outweighs the benefits, especially when viable alternatives are available.

A marine biologist and painstaking researcher, Carson provided a stark warning of where we are headed - she believed that the road we are on is the deceptively easy road to

destruction and that our only chance for the preservation of our planet is to take the road "less traveled by" which although harder, is the right and only sensible path to take.

Her impassioned plea was not rooted in hysteria or emotion but arose from her understanding of biological science and the fragile relationship of the ecosystem that we and all other living things rely on. Despite well over fifty years of evidence regarding the catastrophic effect of polluting the natural world that feeds and sustains us; for political, economic and social reasons humanity continues to poison the world and itself at an alarming rate.

Surely, if it was not already time to end this madness fifty years ago, it is now a seriously pressing matter if we are to avoid poisoning ourselves and many of the earth's organisms into extinction

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