

*A monthly features service about science, technology, and development*

Approx. 900 words

IDRC-F195e

DANGER ON THE FARM

by Rowan Shirkie

OTTAWA, IDRC -- Insecticides are weapons that can help win the war against hunger. But, like all weapons, they can be dangerous in inexperienced hands.

The World Health Organization's Expert Committee on Insecticides estimates that about half-a-million people are poisoned each year by insecticides, and although not all poisonings result in death, most produce needless suffering and disability.

In the developing nations the poisoning rate is alarmingly high. Victims are most often the rural poor who work the land. Inexperience in handling chemicals, and a lack of clearly understandable instructions and safety warnings are making farming a dangerous occupation. But the risks involved in pesticide use are compounded by a system that permits products banned or severely restricted in industrialized countries to be freely exported to developing countries.

One of the most common, DDT, was banned in most industrialized countries a decade ago because its persistence in a stable form in soil and water led to it being concentrated in the food chain, and ultimately in the fatty tissues of humans at the end of the chain. This raised fears of slow poisoning, since DDT is known to damage the central nervous system, heart, liver, and kidneys in experimental animals.

"The banning of DDT in most of the developed nations created a change in the availability of this product in the less-developed countries," explained Samuel Gitona, chief agriculturalist of the National Irrigation Board in Kenya at a recent US strategy conference on pesticide management. "In the short run the supply of DDT

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tended to increase and the price tended to fall. This made the product far more competitive than it had previously been, particularly compared with other, safer pesticides."

Jacob Scherr, lawyer for the US Natural Resources Defense Council, points out that "even where there are product control laws, many developing countries lack the technical capability to monitor imports and control dangerous goods. Lacking such constraints, highly competitive manufacturers of drugs, pesticides, and other hazardous goods resort to deceptive hard-sell promotions and the corruption of officials.

"By permitting the uncontrolled export of hazardous products, the USA and other industrialized nations have displayed an attitude of benign neglect," claims Scherr. The extent of this neglect by the USA is such that 25 percent of pesticide exports are products that are banned for domestic use because of their potential impact on human health or the environment. Legislation in the USA explicitly states that banned or unregistered products are legal for export.

But the USA is only one of the major exporters of pesticides. And following adoption in 1979 of a regulation that requires exporters to inform foreign buyers of the known dangers of banned pesticides, it may well be the country that most conscientiously regulates against hazardous exports. Many other countries do not. Newly-industrialized countries with growing chemical industries are particularly eager to export their products, and many of them have only minimal controls.

Even the most stringent of regulations can be useless. The recent revelation of falsified testing results on the part of a US toxicological laboratory engaged in pesticide safety evaluations for the American and Canadian governments has meant that some 200 chemicals in use in these countries are now suspect and currently under re-evaluation. Developing countries that rely on Canadian and US testing are even more vulnerable.

Multinational chemical corporations can avoid regulations simply by shipping the separate ingredients of a banned pesticide to a developing country, and manufacturing it there in "formulation" plants.

Uncontrolled use of broad-spectrum insecticides - the kind that kill all the insects rather than just the harmful ones - in fact does more harm than good. Predatory insects are often exterminated first, and with their natural enemies gone the plant-eating pests are able to multiply rapidly, leading to severe pest outbreaks. Constant chemical attack also puts an evolutionary pressure on pests, so that only those with immunity can survive and reproduce. According to FAO, the number of pesticide-resistant insects species doubled in the 12 years from 1965 to 1977 - from 182 species to 364.

If governments have been slow to recognize the problem, they have been even slower to act. In the USA, an executive order creating a tighter hazard notification system and placing certain specially dangerous substances on a "commodity control list" was signed by the Carter administration, but was overturned by President Regan last year.

The countries of the Organization for Economic Cooperation and Development (OECD) have only recently adopted protocols for testing new and potentially toxic chemicals, and set guidelines for good laboratory practices, exchange of confidential information between governments, and the adoption of minimum pre-marketing data on new chemicals.

Zimbabwe is reported to have embarked on a program to phase out the use of DDT over the next five years. Although 90 percent of the country's commercial farmers have stopped using DDT, half of the smallholders still use it on their land. The Philippines last year restricted to emergency use only some 24 types of pesticides, including DDT. But it still sprays DDT as part of its malaria eradication program.

In the long run, integrated pest management systems may offer the safest, and perhaps the most effective means of control. Such systems use crop patterns, biological agents such as natural predators and parasites, and very discriminating use of targeted pesticides. But according to Roger Benjamin, an engineer and agronomist who is responsible for managing the Canadian International Development Agency's plant protection projects, "It will be a long time before you will be able to replace pesticides - impossible perhaps to ever eliminate them.

"In emergencies, when you have a massive attack of crop pests or disease-carrying insects, you need a strong chemical weapon to knock them down quickly. But like a weapon too, sometimes chemicals are turned against their users."

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