



# POISONS

ROWAN

**I**n 1971, leptophos, a nerve toxin pesticide, killed an unknown number of farmers in Egypt, caused many more to become ill, and destroyed over 1000 water buffalo.

In Sri Lanka, the number of deaths from pesticide poisoning in 1977 exceeded those from malaria, tetanus, diphtheria, whooping cough, and polio combined — 938 pesticide deaths, compared to 646 as the result of these diseases.

The World Health Organization's Expert Committee on Insecticides estimates that about 500 000 people are poisoned each year from pesticides, and although not all poisonings result in death, most produce needless suffering and disability.

Among the developing nations, the poisoning rate is alarmingly high. Victims are most often the rural poor who work the land. Inexperience in handling modern chemicals and a lack of instructions and safety warnings in local or understandable language make farming a hazardous occupation.

But the risks involved in pesticide use are dangerously compounded by an economic system that permits products banned or severely restricted in industrialized countries to be exported to developing countries.

An FAO survey revealed that half the pesticides used in developing countries were generally persistent organochlorine compounds, such as DDT and aldrin. DDT was banned in most industrialized countries 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. The presence of DDT in a still biologically active form in humans raised fears of

slow poisoning: DDT damaged 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," explains Samuel Gitonga, chief agriculturalist of the National Irrigation Board in Kenya. "In the short run, the supply of DDT 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."

"The traditional rationale for laissez-faire in the export trade is that each sovereign nation is free to make its own judgments about safety and environmental risks and to regulate imported products accordingly," points out Jacob Scherr, lawyer for the Natural Resources Defense Council in the U.S.A. "In practice, the system is primed for abuse. As is true of other technologies, the use of chemicals has spread much more quickly throughout the developing world than has the capability to assure their safe use."

"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 exports of hazardous products, the U.S.A. and other industrialized nations have displayed an attitude of 'malign neglect'," says Scherr.

The extent of "malign neglect" by the U.S.A. is such that 25 percent of pesticide

exports are products that are banned, severely restricted, or have never been registered for domestic use. Many of these have not been independently evaluated for their impact on human health or the environment, while others are known to cause cancer, birth defects, and nerve damage. Legislation in the U.S.A. governing pesticides explicitly states that banned or unregistered products are legal for export.

But the U.S.A. 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 very well be the country that most conscientiously regulates against hazardous exports. Many other countries do not. Newly industrialized countries with growing pesticide industries are particularly eager to export their products, but many of them have only minimal controls.

Even the most conscientious of regulations can be useless. The recent revelation of falsified testing results on the part of a U.S. toxicological laboratory charged with pesticide safety evaluations for the American and Canadian governments has meant that some 200 chemicals now in use in these countries could, in fact, be extremely dangerous. Developing countries that rely on Canadian and U.S. testing are even more vulnerable.

Multinational chemical corporations can also simply avoid regulations by shipping the separate chemical ingredients of a banned pesticide to a developing country and manufacturing it there in "formulation" plants. Once constituted and perhaps renamed, the pesticide can be re-exported.

"Safety is never an absolute. It is not



# FOR EXPORT

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an absence of hazard. Safety is an acceptable level of hazard," says Frederick Rarig, an official of Rohm and Haas Company, a multinational pesticide manufacturer. People refuse to starve simply because there are risks connected with the poisoning of insects, he adds.

"In the course of our investigation," counter David Weir and Mark Schapiro, staff writers at the Center for Investigative Reporting in the U.S.A. who set out to document the transgressions of the pesticide industry, "we came to a startling conclusion: over half, and in some countries up to 70 percent, of the pesticides used in underdeveloped countries are applied to crops destined for export to consumers in Europe, Japan, and the United States. The poor and hungry may labour in the fields, exposed daily to pesticide poisoning, but they do not get to eat the crop protected by pesticides."

In their book, *Circle of poison*<sup>†</sup>, Weir and Schapiro point out that it is the export crops that absorb the bulk of the pesticides. Cotton production in El Salvador claims 20 percent of all the parathion used in the world. Banned herbicides like 2,4,5-T and suspect ones like 2,4-D are also used to help clear huge amounts of forest in Latin America, in aid of livestock production that ends up as cheap hamburgers outside the region.

"The subsistence farmers who grow basic food crops are just too poor to buy pesticides. They are pretty much outside the commercial circuit that operates in developing countries," agrees Roger Benjamin, engineer and agronomist in the Canadian International Development Agency's natural resources division, responsible for managing the

agency's plant protection projects. "If they use pesticides, it is because they have been given them as part of some government program . . . they have no choice. What the poorer food producers end up with are the crude broad-spectrum pesticides that are aggravating problems two- and three-fold by killing off natural predators."

Predatory insects are often exterminated through pesticide applications. With their natural enemies gone, the plant-eating pests are able to multiply rapidly, leading to severe pest outbreaks. Farmers respond by applying more pesticides, further reducing the chance for predators to reestablish themselves. And the constant chemical attack puts an evolutionary pressure on pests so that only those with some immunity can survive and reproduce. According to the FAO, the number of pesticide-resistant insect species doubled in the 12 years from 1965 to 1977.

*Circle of poison* reveals another insidious boomerang effect of pesticide dumping — the return of dangerous chemical residues in imported food. U.S. authorities have found that 10 percent of food imports are contaminated with illegal levels of pesticides. Pesticides may also return in other ways. For example, atmospheric transport of DDT compounds applied in countries outside North America continues to pollute the continent's Great Lakes system long after DDT use was restricted domestically.

If governments have been slow to recognize the problems of pesticide dumping, they have been even slower to act. In the U.S.A., an executive order creating a tighter hazard notification system and placing certain especially dangerous substances on a "commodity control list" was signed by the

*Photos: The use of chemicals has spread quickly in the Third World, but not the capability to ensure their safe use. Farmers like these in Sri Lanka and Colombia (right and left) risk pesticide poisoning while safety precautions are taken at a Senegalese research station (centre).*

Carter administration, but overturned by the new President early this year.

The Organization for Economic Co-operation and Development (OECD) countries 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 premarketing data on new chemicals. Canada's environment minister, John Roberts, hopes that the result of the new OECD approach to toxic substances will be a sort of "chemical passport that will precede the export of these chemicals from one country to another . . ."

Regulation may be a way of attempting to maintain control over a dangerous practice. But eliminating, or drastically reducing, the use of pesticides is an alternative that may offer a safer and perhaps even more effective means of control.

"But it will be a long time before you will be able to replace pesticides — impossible, perhaps, to ever eliminate them," says Roger Benjamin. "In emergencies, when you have a massive attack of crop pests or disease-carrying insects, you need to use a strong chemical weapon to knock them down quickly. But like a weapon too, sometimes chemicals are turned on their users." □

<sup>†</sup>Circle of poison, D. Weir and M. Schapiro. Published by IFDP, 2588 Mission Street, San Francisco, CA 94110 U.S.A.