

Tobacco, Farmers and Pesticides

The Other Story

by Ellen Hickey & Yen-Yen Chan

Ahhh... as you take a puff of smoke, life's problems begin to fade. And with each subsequent puff, things feel better...

If only this were true. Unfortunately, along with the high one gets from nicotine comes a potent price on our health. The medical and scientific evidence of tobacco's cancer causing effects are now widely known. However, less publicized are the thousands of additives and pesticide residues found in cigarettes that are potentially just as damaging to smokers' health. Furthermore, smoking tobacco not only directly impacts the lives of smokers, but exacts a deep toll on the lives of tobacco farmers and their families and the environment. As tobacco companies move into developing countries to take advantage of cheap labor and land, they bring with them a range of health, environmental and social problems.

Tobacco, one of the first cash crops exported from the United States, has been grown in North America for hundreds of years. After World War II, however, the technology for growing tobacco and most other crops in the U.S. changed dramatically. Chemicals developed for war changed farming forever. New, synthetic pesticides appearing on the market helped farmers attain higher yields with less labor, by wiping out insects and eliminating weeds.

It wasn't until years later when Rachel Carson wrote *Silent Spring* that the public began to seriously question whether we had chosen the right path. Since their first widespread use, evidence had been accumulating that these new chemicals could have long as well as short-term effects on humans and the environment. As time went on, scientists continued to discover links between pesticides and cancer, sterility, birth defects and other health problems.¹ But by then, pesticides had become an accepted part of U.S. agriculture and of most people's lives.

More than just smoke

While most of us are aware that smoking tobacco is a life-threatening activity, we may be less aware of the problems associated with the widespread applications of toxic chemicals used to grow the crop. In the U.S., tobacco is grown on more than 650,000 acres in over 20 states,



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primarily in the southern region of the country.² The U.S. Geological Survey (USGS) estimates that at least 25.6 million pounds of pesticides are used on this crop each year.³ The list includes pesticides that are extremely acutely toxic, pesticides that may cause cancer or birth defects, and others that are potent nerve toxins. In fact, over 450 different pesticide products are registered for use on tobacco by the U.S. Environmental Protection Agency.⁴ Information about a few of these pesticides follows:

- **Aldicarb** is one of the most acutely toxic pesticides registered in the U.S.—less than one one-thousandth of an ounce is a lethal dose for a human. In laboratory animals, aldicarb causes chronic damage to the nervous system, suppresses the immune system and adversely affects fetuses. In human cells, aldicarb causes genetic damage. It is also toxic to birds, fish, honey bees and earthworms. Aldicarb's agricultural formulation contains a toxic contaminant, dichloromethane, that causes damage to hearing, vision, kidneys, and livers and is both carcinogenic and mutagenic.⁵ Although it has been banned in at least 13 countries,⁶ it is still widely used in the U.S. and has been found in groundwater in 27 states.⁷ According to the USGS, almost 168,000 pounds of aldicarb were used on U.S. tobacco in 1996.⁸

- **Chlorpyrifos**, a broad spectrum organophosphate insecticide and the most widely used insecticide in the United States, is also used on tobacco. Like all organophosphate insecticides, chlorpyrifos affects the nervous system by inhibiting an enzyme that is important in the

Methyl bromide and tobacco

Methyl bromide is an odorless, toxic gas used to fumigate soil—killing all living organisms. Dozens of crops are grown with methyl bromide; however, most of it is applied to only a handful—tomatoes, strawberries, peppers, nursery crops and tobacco. In 1997, over 5.5 million pounds of methyl bromide were applied to tobacco fields worldwide—over one million pounds in the U.S. alone.

Methyl bromide represents one of the greatest pesticide threats to human health and the environment since DDT. The U.S. Environmental Protection Agency classifies it among the most lethal of acutely toxic pesticides. Those who come in contact with it—including farmworkers, pesticide applicators and people living or working near where it is used—can suffer poisoning, neurological damage and reproductive harm.

And, it destroys the Earth's protective ozone layer. Depletion of the ozone layer leads to increased UV-B radiation exposure that can result in health problems such as skin cancer, eye cataracts and suppression of the immune system.

Sources: California Department of Pesticide Regulation, *Methyl Bromide*, March, 1994. U.S. EPA, *Methyl Bromide Use*, April 2, 1997. UN Environment Programme, *The Impact of Ozone Layer Depletion*, 1992.



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U.S. tobacco farmers are often family farmers

"Tobacco farmers are farmers, and among the best of farmers; their know-how is a great public asset... They are farming some very good land. They should be growing food for the people of their region, the people of neighboring cities—or they should have a viable choice of doing so... Tobacco growing is a problem to be solved, but so far state government and the universities shown little interest in solving it... We need to make it possible for farmers to choose not to grow tobacco and yet continue farming."
— **Wendell Berry, Kentucky poet and tobacco farmer.**¹

For more than 60 years, the federal tobacco program has ensured that tobacco farmers are paid for their crops an amount at least equal to the cost of production. As a result, federal price supports for tobacco have helped preserve small family tobacco farms in a time when the number of small farms across the country has decreased dramatically.² In 1960 the U.S. had a total of nearly six million farmers, in 1992 there were fewer than two million.³ Until the 1960s, Most U.S. farmers had the same protection as tobacco farmers. However, during that period the federal government's push to expand exports, combined with corporate pressure for lower food prices, led to the dismantling of programs that protected most farmers.

"The Tobacco Program," a name commonly used to describe a group of tobacco-related government subsidies and supports, has gone through many revisions, but the intent has remained the same since the 1930s: to ensure stability of farm-level price and supply, through a combination of acreage allotments and marketing quotas. Growers who keep to quotas receive price supports established before the production year. Currently, assessments on tobacco producers cover most costs of the program, leaving the government primarily with administrative costs.⁴

U.S. farmers continue to grow tobacco despite increased foreign competition and public pressure to change crops primarily because of high prices and guaranteed markets. However, the U.S. public is becoming increasingly unhappy with any government programs that subsidize tobacco. President Clinton has vowed to protect tobacco farmers who might face financial disaster as a result of any tobacco settlements. Clinton recognized the complexity of the problem when he stated, "You know, tobacco has a very high return per acre, and so it's not a simple thing. You can't just say to a tobacco farmer, 'Go plant soybeans,' even if the soil will hold them."⁵ To help preserve family farms and rural communities in this age of factory farming and huge agribusiness, the U.S. government must ensure that tobacco farmers can make the transition to growing other, more sustainable crops.

1 Berry, W., "Our Tobacco Problem," *Utne Reader*, Sept/Oct 1992.
2 Bates, E., "Farmers Who Are Kicking the Habit," *The Nation*, February 13, 1995.
3 Williams, C., "Why other farmers envy tobacco growers," *Utne Reader*, Sept/Oct 1992.
4 Reaves, D.W. and W. Purcell, "Beyond the Controversy: What Happens to the Tobacco Producers?" *Virginia Issues and Answers*, Vol. 3, No. 2.
5 Associated Press, "Clinton promises to protect farmers," February 18, 1997.

transmission of nerve impulses. Symptoms of acute poisoning include headache, nausea, muscle twitching and convulsions. Chlorpyrifos poisonings are reported to state and federal agencies more often than poisonings of almost every other insecticide. In addition to acute poisonings, exposure to chlorpyrifos products has also been associated with human birth defects. The pesticide has caused genetic damage in human blood and lymph cells and has also been found to affect the male reproductive system. Chlorpyrifos is known to contaminate air, groundwater, rivers, lakes, rainwater and fog, with residues being found up to 15 miles from the site of application.⁹ USGS estimates that over 700,000 pounds of chlorpyrifos were used on tobacco in the U.S. in 1996.¹⁰

• **1,3-D** (1,3-Dichloropropene, also known as Telone) is a highly toxic soil fumigant that causes respiratory problems in humans, as well as skin and eye irritation and kidney damage. A California study of applicators found evidence of kidney damage in nine of the 15 workers tested. 1,3-D causes cancer in laboratory animals and genetic damage in insects and mammal cells. It leaches through soil easily and has been found in U.S. groundwater, drinking water and rainwater. Air monitoring studies in California found that people living near fields where 1,3-D was used as a fumigant were exposed to the chemical.¹¹ More than 12 million pounds of 1,3-D were used on tobacco in 1996 according to USGS estimates.¹²

Much of the world looks to the United States as an example of effective pesticide regulation; however, pesticide use in the U.S. presents a very real threat to human health.¹³ The most directly affected are farmers and farmworkers who are on the frontline of pesticide exposure. Many people assume that because a pesticide is registered by the U.S. EPA, it has been thoroughly tested and is basically safe to use. This is not necessarily the case. The registration process is cumbersome and misses or ignores many important effects. Pesticides may even be registered while health and safety data are still being generated. In addition, a large number of older pesticides, that were registered before current evaluation requirements came into effect, have not been reevaluated, even though such reevaluations were mandated in the 1970s.¹⁴ Although federal law sets standards for worker protection, these standards are often inadequate and may not be fully implemented or enforced.¹⁵

But more than just human health is at stake. Many insecticides used on tobacco are especially hazardous to wildlife and the environment. Pesticides used on tobacco such as carbofuran, aldicarb,

fenamiphos, disulfoton and ethoprop are all extremely toxic to birds and have caused wildlife deaths.¹⁶ Frequent drenching of hundreds of thousands of acres of farmland with highly toxic chemicals destroys beneficial insects and soil microorganisms, while contaminating groundwater, surface water, rivers and lakes.

Tobacco moves South

Tobacco is a valuable crop—in 1995 it was the seventh largest cash crop overall in the U.S., worth more than \$4,000 per acre.¹⁷ However, the value of the crop hasn't kept the number of U.S. tobacco farms from declining dramatically in the past 25 years. Between 1954 and 1992, the number of U.S. farms that grew tobacco dropped 75%. Total tobacco acreage and pounds grown also declined over the past two decades, from over one million acres and 2.2 billion pounds in 1975 to less than 670,000 acres and 1.3 billion pounds in 1995.¹⁸

While a decreasing number of U.S. smokers and higher cigarette taxes are in part responsible for the decline, there is another key factor. Tobacco companies are turning to developing countries not only to expand their markets, but for a source of less expensive tobacco.¹⁹ Foreign grown tobacco now accounts for one-third of the tobacco in U.S.-made cigarettes compared to about 15% just 20 years ago.²⁰ The U.S. has become the leading worldwide importer of tobacco, and the threat to U.S. tobacco farmers from foreign producers continues to grow. Dr. Judith Mackay, Director of the Asian Consultancy on Tobacco Control, predicts that there will be virtually no tobacco grown in the U.S. by the year 2025 as tobacco companies will have shifted growing and manufacturing overseas where overhead is less and markets are larger.²¹ According to a report by the Panos Institute, over six million tons of tobacco are grown in the developing world on over 1.6 million acres, and that amount is increasing. For example, Brazil increased tobacco production by 41% between 1989 and 1991, and Africa increased production by 13% during the same period.²²

In the past, smokers were willing to pay a premium price for U.S. tobacco because it was considered to be a higher quality than tobacco grown elsewhere. But as tobacco companies move into developing countries, they bring with them U.S. technology and practices. The quality of tobacco from exporting countries such as Brazil, Zimbabwe, Malawi, Turkey and Greece is improving, and, not surprisingly, the cost differential is striking. A pound of Brazilian tobacco, for example, can sell for about 54 cents, or about one-third the price of U.S. tobacco.²³

Smoking and pesticides

A pesticide can enter the body in three ways: by ingestion, absorption through the skin or eyes, or breathing. Smokers inhaling tobacco containing pesticide residues, therefore, are exposing themselves—and others—to pesticides. Researchers have found evidence that, in some cases, pesticide residues in smoke inhaled by smokers may even accumulate in the smoker's body.¹

Residues of some pesticides used to grow tobacco remain on the tobacco leaf and can be present in cigarettes. Other pesticides that haven't been used in years, such as DDT, may be found in tobacco due to the persistence of these chemicals in the soil where the tobacco is grown.² Pesticides can also drift onto tobacco from neighboring farmers' fields during application to other crops. In some developing countries where tobacco is grown, pesticide regulations may be more lax or not enforced, and pesticides no longer allowed for use in the U.S. may be used regularly. All in all, a wide range of agricultural chemicals may be found in cigarettes—yet little testing is done to determine smokers' exposure to pesticides.

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(USDA) is responsible for testing tobacco for pesticide residues—one sample is tested for every 100,000 pounds of processed tobacco.³ However, USDA tests only for pesticides that are no longer used in the U.S., such as DDT, endrin, and toxaphene.⁴ No screening is done by any U.S. government agency to detect residues of pesticides that are legally sprayed on tobacco crops in the U.S.⁵—even though some of these pesticides may cause cancer or birth defects.

- In 1995, Philip Morris recalled eight billion cigarettes because traces of the chemical methyl isothiocyanate (MITC) were found in the cigarette filters. MITC, a severe skin and eye irritant, is used for making paperboard for cigarette hard packs and has also been used as a pesticide.⁶ Subsequent analysis by the Center for Disease Control (CDC) also found MITC in Philip Morris cigarettes made after and up to a year before the recall as well as in cigarettes from other manufacturers. Although smokers called CDC during the recall period complaining of health problems, the Center concluded that the reported health problems were most likely caused by effects of long term smoking

rather than simply exposure to MITC.⁷ The Center's conclusions, however, do not appear to have been based on further investigation into the possible health effects of MITC residues in Philip Morris cigarettes.

- Internal documents belonging to the Liggett Group, a U.S. tobacco company, reveal that at least until 1969, Liggett cigarettes contained a variety of hazardous substances including pesticides. The documents included a list of pesticides (such as arsenic, DDT and toxaphene), fertilizers and additives that Liggett had found in its products before 1969. The list of chemicals was compiled in preparation for upcoming lawsuits and was based on a review of tests done by the company from 1940 to 1969.⁸

1 Quit Victoria, *Tobacco in Australia: Facts and Issues*, 1995, Commonwealth Dept. of Human Services and Health, ASH Australia, Victorian Smoking and Health Program, New South Wales Drug and Alcohol Directorate and the Health Dept. of Western Australia.

2 Ibid.

3 Steve Freeman, USDA Tobacco Program, personal communication, March 9, 1998

4 Federal Register, Vol. 54, No. 110, June 9, 1989, 7 CFR Part 29.

5 Steve Freeman, op. cit.

6 CA Dept. of Pesticide Regulation, "Restrictions Placed on Use of Pesticides Metam Sodium and MITC," No. 94-23, June 22, 1994.

7 Associated Press, "CDC: Nothing wrong with recalled cigarettes," September 4, 1997.

8 "Pesticides in Older Cigarettes, Papers Say," *Washington Post*, April 11, 1997.

The human cost of tobacco

One reason for the low price of imported tobacco is that much of the direct and indirect production costs are quietly absorbed by farmers, their families and the environment in Southern countries where tobacco is grown. A general lack of environmental, pesticide and labor regulations make developing countries fertile ground for expansion of the tobacco industry. Even in countries where such regulations do exist, governments often lack resources for implementation and enforcement.²⁴

Although in some countries such as Zimbabwe, tobacco is grown on plantations, much of the tobacco in developing countries is grown by small farmers on plots of land not much larger than an acre. It is common for tobacco companies to contract out production directly with these farmers, selling them seeds, fertilizers, pesticides and technical advice (usually on credit), and buying the crop after it is dried.²⁵ Large quantities of pesticides are often used on tobacco crops—usually on the advice of the tobacco companies or agricultural/pesticide advisors. For example, an instruction leaflet given to tobacco farmers in Kenya includes the recommendation that during the three month period from seedbed to transplanting, there should be 16 separate applications of pesticides.²⁶ The low price of Kenyan tobacco does not reflect the loss of local wildlife, contamination of soil and water or ill health effects suffered by Kenyan farmers and their future generations.

Pesticide use in the United States is still a threat to both public health and the environment, despite having some of the world's strongest regulations in place. In most developing countries, the problems associated with the use of pesticides are exponentially worse.²⁷ As Dr. Lori Ann Thrupp of the World Resources Institute writes, "Most developing countries lack the political will and resources to devote attention to the hazards of pesticides, and are often pressured by pesticide firms to allow unfettered marketing."²⁸ In these countries, government agencies and pesticide companies rarely provide information to growers about the dangers of pesticides. As a result, farmers in developing countries are often unaware of the hazards and of the need to use protective equipment. Such gear is rarely available due to its high cost, and even when

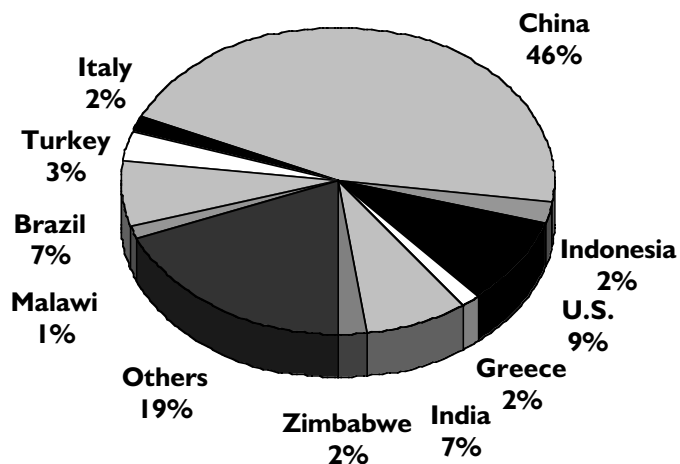
available is seldom used in hot climates. In poor rural areas in many developing countries, it is common to see farmers wearing short pants and short-sleeved shirts while mixing and applying pesticides.

It is also not uncommon for labels on pesticide products to have incomplete or illegible information on hazards and toxicity, or for the information to be in a language foreign to local people. In many cases, those handling the chemicals are unable to read. Farmers and workers regularly use old equipment, such as leaky sprayers and corroded nozzles. Such equipment increases worker exposure to the chemicals as well as costing the farmers even more money because of waste. Storage facilities for pesticides and equipment are seldom adequate in developing countries. Small farmers often store pesticides in unventilated sheds or even

continued on page 6

Top Tobacco Producers 1997

(dry weight production)



Source: Arnelia Trent, Foreign Agricultural Service, USDA, personal communication, April 9, 1998.

Tobacco farming in Brazil

Brazil is one of the top five tobacco-producing countries in the world, exporting more tobacco to the U.S. than any other country¹ and producing over 600,000 tons of tobacco in 1997 alone.² Most of that tobacco (90%) is grown in Brazil's southern region which includes the states of Paraná, Santa Catarina and Rio Grande do Sul. Multinational corporations such as British Tobacco and Philip Morris have huge investments in this region—one of the most productive tobacco regions in the world. Most of the tobacco is grown on small independent farms, under strict contracts with the corporations which provide all inputs through a carefully controlled system of loans and credit.³ According to the Association of Brazilian Tobacco Growers, over 150,000 small farms grow tobacco in Brazil.⁴ It is estimated that approximately 750,000 men, women and children work on these farms.⁵

According to AS-PTA, a Brazilian nongovernmental organization that works closely with tobacco growers, these small farmers face numerous problems. Initially, tobacco companies, which contract directly with farmers, provide credit enabling them to build drying sheds to cure the tobacco leaf after harvesting. This debt is paid off with tobacco that the farmer produces, but the process can often take up to five years. During this time, farmers are also buying seeds, fertilizer and pesticides from the company, drawing them further into debt. Tobacco companies also exert control over farmers by determining how much tobacco will be planted and the amount of fertilizer and pesticides to be used. To ensure that growers are following the prescribed regime, company inspectors pay regular visits to the farms and charge the cost of this "technical assistance" to farmers.⁶

At the end of the season, farmers are paid according to the quality of their tobacco. However, the price is usually determined far away from the farmers' fields, at which time the costs of any inputs (seeds, fertilizers, pesticides, etc.) are deducted. Farmers only discover the value of their crop and their net income upon receiving a receipt from the company. In a bad year, it is not unusual for a farmer to end up owing the tobacco company, and using hard-earned income from other crops such as maize, beans or onions to pay off these debts.

Pesticide use is intensive, with normal application rates approaching 30 kilograms of pesticides per hectare. These levels increase in dry years and can climb as high as

100 kilos of organophosphates per hectare.⁷ Many of the pesticides used to grow tobacco in Brazil are highly toxic and include such chemicals as methyl bromide, carbo-furan, acephate and methamidophos. The amount of pesticides used varies by region, but a 1993 survey of farmers revealed that tobacco companies had been requiring increasing use of pesticides over the years.⁸

According to Brazil's Ministry of Health, 6,000 cases of pesticide poisoning were reported in 1993 alone. However, official data likely underestimates pesticide poisonings for two main reasons. First, many farmers don't go to doctors because there are none in their areas. Secondly, doctors and other health professionals usually don't report cases of pesticide poisoning even when they do see them. However, this lack of data does not mean that serious problems do not exist. AS-PTA has talked to tobacco farmers and union leaders and found evidence that pesticide poisonings are widespread and affect most farmers and community members, including children, pregnant women and the elderly.⁹

The Servico Brasileiro de Justica e Paz (SEJUP), a Brazilian nongovernmental organization, estimates that as many as 300,000 people are poisoned by pesticides in Brazil each year, and that this number has been rising annually.¹⁰ Some Brazilian NGOs have attributed the high level of poisonings to changes in pesticide labeling regulations enacted by the Ministry of Health. According to Sebastiao Pinheiro of the Brazilian Institute of Renewable Natural Resources, the new labels for highly dangerous products resemble those for less toxic chemicals, lulling pesticide buyers into a false sense of security. Pinheiro challenged the motives behind the government reclassification, noting that it took place only after pressure from the agrochemical industry.¹¹

In Brazil, as in many developing countries, the danger from pesticides continues far beyond the fields in which they are used. A pesticide expert from Paraná estimates that 14 million bags, bottles and plastic containers that once held pesticides are scattered throughout the country. In rural areas, these containers are often re-used as pans, cups or water containers, and children are frequently found using them as toys.¹²

Researchers recently discovered another negative side to tobacco cultivation. In 1996, researchers from the Federal Univer-

sity of Rio Grande do Sul reported finding a potentially disturbing link between organophosphate pesticides and a skyrocketing suicide rate in Venancio Aires, a small city in the state of Rio Grande do Sul. Suicide rates had soared to 21.8 suicides per 100,000 inhabitants—nearly seven times the average Brazilian suicide rate of 3.2 people per 100,000.¹³

The researchers found that 66% of the dead had worked on tobacco farms, and that April, October, November and December were the months with the highest levels of suicides.¹⁴ These months coincided with the seeding and harvesting of the tobacco plants, a time when organophosphate pesticides are used intensively. During the planting season, one local hospital in Venancio Aires reported seeing eight to ten cases of agrochemical poisonings each day.¹⁵ The study points to evidence that those who committed suicide were suffering from acute neurological imbalances and mental disorders (organophosphate induced delayed neuropathy) that is caused by organophosphate pesticides and can result in psychological depression.¹⁶

The 1997/98 season looks like it will be one of the worst for tobacco farmers in the State of Paraná. El Niño has caused widespread crop failures, and it appears that many farmers will end up owing tobacco companies large sums of money. But their other crops have also failed leaving them with no other source of income or money with which to repay the debt. Their options are few, and the Farmers' Union expects that because of crop failures, thousand of families will be forced to relocate to urban areas. The harmful effects of the tobacco industry in Brazil thus extend far beyond U.S. consumers of their tobacco; pollution of local agricultural and natural resources in Brazil is coupled with rising indebtedness of small farmers, increased rural-urban migration and exacerbation of urban slum conditions, human illness from pesticide poisoning and even death.

1 Capehart, T., 1997. "U.S. Tobacco Import Update," Tobacco Briefing Room, USDA website.

2 International Tobacco Growers Association press release, November 12, 1997.

3 Castilho, C., "New Markets for Bad Products," *The WorldPaper*, August 1997.

4 Adnrei, E., 1996. *Catalog of Agrochemicals*, São Paulo.

5 Angela Cordeiro, AS-PTA, personal communication, March 19, 1998.

6 Ibid.

7 Castilho, op.cit.

8 Cordeiro, op. cit.

9 Ibid.

10 SEJUP News, November 20 and December 5, 1996.

11 "Poisonings in Brazil," *Global Pesticide Campaigner* March 1997.

12 Castilho, op. cit.

13 Ibid.

14 Ibid.

15 "Poisonings in Brazil," op. cit.

16 Castilho, op. cit.

The Story of the Huichol Indians

For thousands of years, the Huichol Indians lived in the mountains and forests of the Sierra Madres Occidentales in the state of Jalisco, Mexico. They believed that the land was sacred, and they held a respect for all creatures whom they considered their relatives from the beginning of time. The land and forests provided them with all that they needed to live. However, all this changed in 1976, when large timber companies moved into the region, constructing roads and destroying the forests that the Huicholes depended on for survival.

Forced to leave in search of work, many Huicholes traveled to the Nayarit coast of Mexico, where they joined other indigenous peoples to work on tobacco plantations as migrant day laborers. As displaced migrant workers, the Huicholes had few options but to take the available jobs that often resulted in exposure to highly toxic pesticides.

The Mexican Ministry of Health reported a total of 1500 deaths from pesticide poisonings in 1993, approximately four deaths per day.¹ One reason for the poisonings is that little if any training on the proper use of pesticides is given to farmworkers. The Huicholes and others who come to the Nayarit coast have no former experience or knowledge about the dangers of pesticides. And to make matters worse, tobacco companies and pesticide manufacturers recommend frequent applications of toxic chemicals,



Patricia Diaz-Romo

Children next to a backpack sprayer used to spray pesticides on tobacco.

without regard for either the farmers' health or the long term effects of chemical pollution on the region's agricultural and natural resources.

Among the 200 pesticides that the Mexican government has authorized for use in agriculture, 32 have been banned in other countries.² For example, aldicarb, banned in at least 13 countries, continues to be widely used in Mexico.³ Swallowing only a few drops of this deadly poison can kill an adult.⁴ Other highly toxic pesticides that are used in the Nayarit tobacco fields include methyl parathion, methamidophos, diazinon, chlordane, carbaryl, chlorpyrifos, acephate and methyl bromide.⁵

Many of the Huichol Indians and other indigenous people working on the tobacco farms face an increasing risk of disease including cancer. Ignacio Carillo had been working several years in the tobacco fields of Nayarit, when suddenly he began bleeding uncontrollably. Ignacio died soon afterwards of aplastic anemia, a blood disease that has been associated with chronic exposure to certain pesticides. Victor Guzman, also a young tobacco worker, collapsed while working in the fields and died. In a voice trembling with grief, one woman who had come to Nayarit to work in the tobacco plantations lamented, "The people of the communities of Santa Catarina and from San Sebastian, we come looking for work. We have been carrying poisonous things in our bodies. Here we are feeling sick."⁶

Adult farmworkers are not the only ones suffering from pesticide exposure. Children too are exposed. Because tobacco workers in Nayarit earn wages based on the amount of work performed, everyone in a family—including children—must work to earn enough to survive. This can have serious implications since children's developing bodies are much more susceptible to the toxic effects of pesticides. Studies have shown that exposure to pesticides early in life can lead to a range of problems including mental impairment, damage to the nervous system, reproductive defects and cancer.⁷

Tobacco companies and pesticide manufacturers determine what pesticides to use, when and how much; farmworkers are rarely provided with essential safety equipment such as gloves, gas masks and protective clothing. Although this is a clear violation of Mexico's pesticide regulations, farmworkers have little recourse.⁸

Sadly, the story of the Huicholes is not unique. The World Health Organization



Patricia Diaz-Romo

estimated that in 1985 there were approximately three million cases of severe pesticide poisonings globally and 220,000 deaths.⁹ Additionally, a 1990 study published in the World Health Statistics Quarterly estimated that approximately 25 million pesticide poisonings occur annually in developing countries among agricultural workers.¹⁰

Until governments enact and enforce stronger regulations that protect people and the environment from pesticides, and until industries such as the tobacco and pesticide industries are held accountable for their actions, communities in developing countries and indigenous cultures like the Huicholes will continue to suffer.

The information presented here is based on the documentary film by Patricia Diaz-Romo, "Huicholes and Pesticides," produced in Mexico in 1994. Copies of the video are available from PAN North America.

- 1 Diaz-Romo, P. 1994. "Huicholes and Pesticides," Patricia Diaz-Romo Production, Mexico.
- 2 United Nations. 1994. *Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments*. New York, USA; Diaz-Romo, P. op. cit.
- 3 Pesticide Action Network. 1995. "Demise of the Dirty Dozen," USA.
- 4 Pesticide Action Network International. 1995. "Dirty Dozen Pesticide Fact Sheets," USA.
- 5 Diaz-Romo, P. et al. August 1997. "Los Plaguicidas En Mexico: Un caso concreto: plaguicidas y wixaritari," Informe para el Centro de Derechos Humanos Miguel Agustín Pro. Mexico.
- 6 Interview with a Huichol woman in the documentary film "Huicholes and Pesticides," by Patricia Diaz-Romo, produced in 1994 in Mexico.
- 7 National Research Council. 1993. *Pesticides in the Diets of Infants and Children*. National Academy Press, Washington, D.C.; Wargo, J. 1996. *Our Children's Toxic Legacy*. Yale University Press, New Haven, CT.
- 8 "Huicholes and Pesticides," op. cit.
- 9 Jeyaratnam, J. 1990. "Acute Pesticide Poisoning: A Major Global Health Problem," *World Health Statistics Quarterly*, no. 43.
- 10 Ibid.

inside their homes—resulting in all family members becoming exposed. Rural families may also use pesticide containers to hold drinking water and other supplies including food. Those who live in rural communities near areas of pesticide use can also be exposed to the toxic chemicals through air or in contaminated water.²⁹

On small farms and plantations, children are often involved in growing tobacco, and therefore are also directly exposed to pesticides.³⁰ In a study by the U.S. National Academy of Sciences, a panel of experts concluded that compared to exposures later in life, pesticide exposures early on can lead to a greater risk of cancer, damage to the child's developing nervous system and immune system dysfunction.³¹ According to a report by the International Labour Organization (ILO), children throughout the developing world can be found mixing, loading and applying pesticides.³²

A cash crop?

Tobacco companies often maintain that tobacco production is a boon for developing countries because it secures needed foreign currency and reduces their debt. The International Tobacco Growers Association goes so far as to state that “the income from tobacco provides the basis for crop diversification and for the planting of subsistence food crops.”³³ This is far from reality. Like their American counterparts, farmers in developing countries see little of the profits that tobacco companies reap from their crop.³⁴

In some circumstances, they may even find themselves forced to continue growing tobacco to pay off the debt incurred by purchasing seeds and pesticides from tobacco companies.³⁵ (See Brazil: A case study, page 4.) And as Dr. Judith Mackay states, the amount of land currently used to grow tobacco worldwide could instead be used to feed 10 to 20 million people. Ironically, when good farmland is diverted to grow tobacco, governments may find themselves facing local food shortages and bearing the additional cost of importing food.³⁶

To ensure an endless supply of inexpensive cigarettes and cigars and high profits for tobacco companies, millions of pounds of toxic chemicals are being used on millions of acres of land around the world—land that in most cases could be used to grow food. Viewed in a global context, tobacco not only endangers the lives of smokers, it threatens the health and well-being of millions of tobacco farmers and workers in countries around the world. Concerned U.S. citizens should rightly question the sustainability and the sanity of the tobacco industry, at home and abroad.

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San Francisco Tobacco Free Coalition

The SF Tobacco Free Coalition, a grassroots coalition of health, youth-serving and environmental agencies has successfully advocated for tobacco control ordinances in San Francisco, including a ban on cigarette vending machines, ban on tobacco and alcohol advertising on City property, creation of smokefree worksites and restaurants, ban on tobacco self-service displays, and most recently, severely limiting tobacco advertising in publicly visible locations such as storefronts and billboards.

However, the Coalition has become acutely aware that any local success is mitigated by the relentless march of the Tobacco Industry to bring death and disability to the rest of the world. It is clear that our responsibility here in California is to think globally and act locally. The Tobacco Industry is not bound by any borders nationally or internationally in its insatiable drive for new customers. Neither can a city as international as San Francisco—whose residents come from many of the countries targeted by the U.S. tobacco companies—be bound by borders in its work to bring this industry to an end.

Tobacco-related diseases kill nearly three million people each year worldwide—and that number continues to grow. According to the World Health Organization by the year 2025, ten million people worldwide will die of tobacco related diseases—with 70% of those deaths occurring in the developing world.

San Francisco has shown leadership in the area of environmental policy as the first city to pass local legislation to control use of harmful pesticides on City and County property. The SF Tobacco Free Coalition recognizes that it is hypocritical to tolerate the use of pesticides in other places while not tolerating them in our backyard. Given the behavior of the tobacco industry both here and abroad, the United States has a moral imperative to hold U.S. tobacco companies accountable for their practices in other countries.

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Pesticide Action Network

Founded in 1982, Pesticide Action Network is an international coalition of over 400 citizens groups in more than 60 countries working to oppose the misuse of pesticides and to promote sustainable agriculture and ecologically sound pest management.

For more information and to order copies of this paper, contact:

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Notes

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