
In Africa, DDT Makes A Comeback To Save Lives

Spurred by the dramatic and life-saving results in a few African nations that persisted in using DDT, a larger group of nations, now malaria-ravaged, want to use the banned pesticide. Marjorie Mazel Hecht reports.

The use of DDT for spraying the inside walls of houses, a proven way to quickly stop the rate of malaria incidence, is making a comeback in African nations where saving lives has been given priority over the fears and lies of environmentalists.

In **Uganda**, Minister of Health Brigadier Jim Muhwezi has renewed house spraying in the most malarious areas, with the approval of the Ugandan Cabinet. Muhwezi dismissed the critics of DDT, saying, "How many people must die of malaria while these debates continue? If DDT can save lives, why not use it as we wait for the alternatives," as reported in the Kampala newspaper, *New Vision*, on April 27. Muhwezi also noted that the country of Mauritius was about to be declared malaria free because of its use of DDT.

In **Zambia**, where malaria incidence and deaths had climbed since the 1980s, the Health Minister is aggressively pursuing the use of DDT to fight malaria, after great success using DDT in the copper mining areas beginning in 2000. When the Konkola Copper Mines began spraying the inside walls of houses with DDT, there was a 50% reduction of malaria in one year. The next year, there was a further 50% reduction, and since then there have been no malaria deaths in that region.

In **Zimbabwe**, Minister of Health David Parirenyatwa reintroduced DDT because it was "cheap and more effective, with a longer residual killing power." He told the *Bulawayo Chronicle* in October 2003, "So many people have died of malaria since January and we are doing our best to control it. . . . DDT is very effective, because it sticks for a long time on the walls and kills a lot of mosquitoes with a single spray. . . .

South Africa and Swaziland are using it, and I don't see why we should not use it."

In **Kenya**, the DDT fight is still on, with the director of Kenya's premier research institute, KEMRI, taking a strong stand for the use of DDT, and another research institute, the International Center of Insect Physiology and Ecology, taking the anti-DDT, environmentalist view. Malaria now kills 700 Kenyans a day, and as KEMRI director Davy Koech told the opposition, "Anything that can reduce malaria deaths by 80% should be given another thought."

Kenya had a terrible outbreak of malaria after heavy rains in 2002, with hundreds of deaths. According to the group Doctors without Borders, there are about 8.2 million cases of malaria reported in Kenya per year. The epidemic-prone areas are the highlands, where about 23% of the population lives.

South Africa made the decision to bring back DDT in the year 2000, after a four-year hiatus in its use, during which time the malaria cases and death rates surged in the worst epidemic in the country's history. In 1996, South Africa had substituted a synthetic pyrethroid insecticide for DDT, under pressure from environmentalists. But the mosquitoes became resistant to this pesticide. As a result, between 1996 and 2000, the number of malaria cases in South Africa increased by more than 450%, with an increased mortality rate of nearly 1,000%!

After one year of DDT use, the incidence of malaria in the worst-hit province, KwaZulu Natal, fell by 80%.

The DDT program for malaria control has the support of South Africa's leading researchers, doctors, and malaria control experts, who released a statement in April 2004



Anti-malarial spraying in Guyana. The British medical journal The Lancet reported that no adverse effects of DDT were ever experienced by the 130,000 spraymen or the 535 million people living in sprayed houses during 1959.

backing the indoor spraying program, and slamming the latest permutation in the DDT scare stories, that DDT lowers sperm levels and quality. The statement notes, “We believe that the Department of Health is correct in its choice of DDT in its malaria control program, and as scientists, medical practitioners, and public health professionals, endorse its use.”

Killed by the Big Lie

It may seem only rational when people are dying by the thousands, and when malaria kills one African child every 30 seconds, for a country to institute DDT house spraying, which is known to efficiently prevent malaria, and has a proven record of no harm to human beings. But such an assumption overlooks the huge aura of fear and ignorance about DDT, built up by the Malthusian lobby over the past 35 years. The very word “DDT” is enough to invoke terror today among the ignorant and gullible—and also some of the well-meaning.

DDT was banned in the United States in 1972 on the basis of a big lie, not science (see box). In fact, the U.S. Environmental Protection Agency held seven months of hearings on the issue, producing 9,000 pages of testimony. The EPA hearing examiner, Edmund Sweeney, ruled, on the basis of the scientific evidence, that DDT should not be banned. “DDT is not carcinogenic, mutagenic, or teratogenic to man [and] these uses of DDT do not have a deleterious effect on fish, birds, wildlife, or estuarine organisms,” Sweeney concluded.

But two months later, without even reading the testimony or attending the hearings, EPA administrator William Ruckelshaus overruled the EPA hearing officer and banned DDT. He later admitted that he made the decision for “political” reasons.

The effect of Ruckelshaus’s political decision was to thrust new anti-DDT groups (like the Environmental Defense Fund) into well-funded prominence; to remove DDT from the list of pesticides that U.S. agencies would fund abroad; and to increase the malaria death rates in tropical countries. The U.S. Agency for International Development stopped supporting programs involving DDT (and instead increased funding for birth control programs). Other industrial nations did the same.

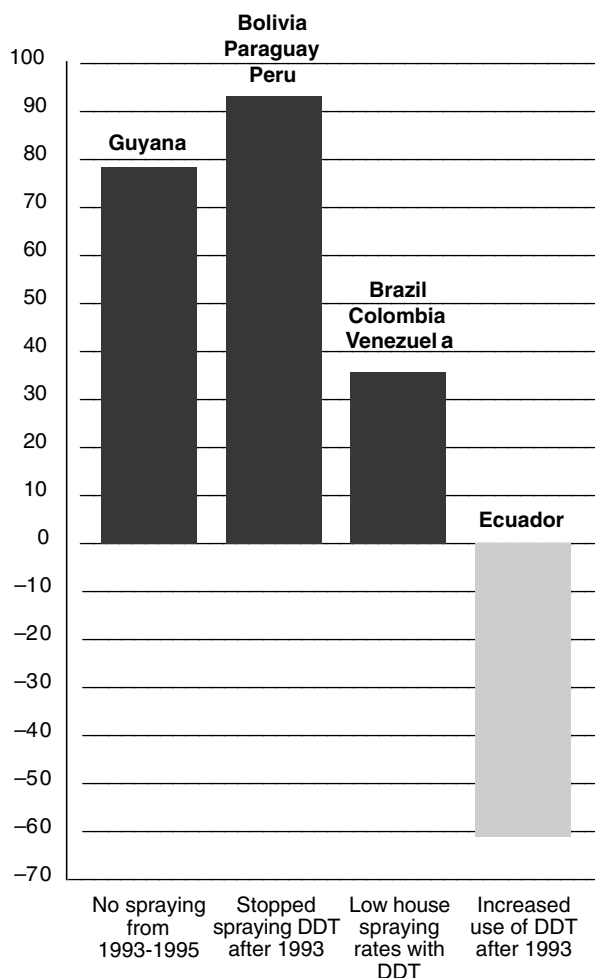
As a result, just as a few African nations and other tropical countries were on the verge of wiping out malaria, by using DDT to control the mosquito vectors that spread it, those programs were shut down. Countries could not afford to give up the funds for their health and development programs, from donor nations that now would not support DDT. Instead, they gave up DDT. The malaria-carrying mosquitoes were the immediate beneficiaries, and malaria soon became Africa’s largest killer, only more recently to be equalled by AIDS. There are an estimated 300-500 million new cases of malaria per year now, 90% of which are in Africa. There are 2.7 million deaths from malaria per year, mostly those of children under 5 years old.

But the toll of malaria is not measured simply in deaths.

FIGURE 1

Increases in Malaria for Countries in South America, 1993-1995

(Percent Increase in Numbers of Malaria Cases)



Source: Adapted from D. Roberts et al., *Emerging Infectious Diseases*, July-September 1997, p. 300.

Malaria is a terrible disease, sapping the strength of those who do not die, making them feverish, chilled, with repeated vomiting, and too sick and weak to work or farm. Malaria overburdens the limited health systems of poor countries, and ruins their economies.

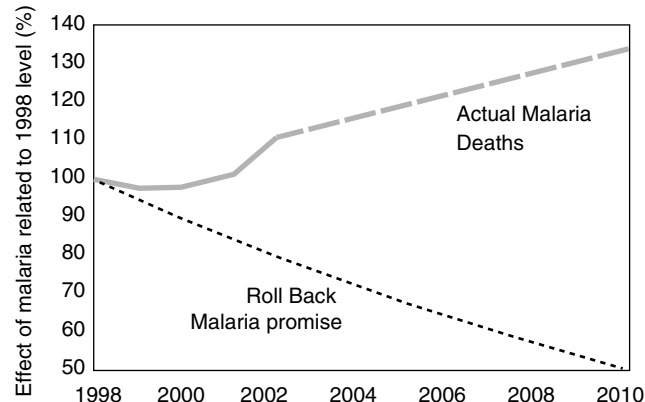
Too Many Lives Saved?

At the time DDT was banned, it was recognized as having saved more lives than any other man-made chemical. The U.S. National Academy of Sciences estimated that DDT had prevented 500 million human deaths from malaria, since it came into use during World War II. Millions of troops and refugees would have died from disease at the end of the war,

FIGURE 2

Malaria Deaths Since Roll Back Malaria Program, As Percent of 1998 Level

(1998 = 100%)



Source: Adapted from the *British Medical Journal*, May 8, 2004.

Annual deaths from malaria worldwide are far higher than in 1998, when the Roll Back Malaria campaign was initiated. It promised to halve the number of malaria deaths by 2010, and a United Nations resolution declared 2001-2010 "the Decade to Roll Back Malaria, especially in Africa."

had they not been dusted with DDT to kill the body lice that spread typhus.

The safety record of DDT was excellent. No human harm was ever documented. Health records around the world showed that when malaria incidence was controlled using DDT, populations were healthier, infant mortality decreased, and population growth increased. Why was DDT banned, after such spectacular success? The reason was given bluntly by Alexander King, founder of the Malthusian Club of Rome, who wrote in a biographical essay in 1990, "My chief quarrel with DDT in hindsight is that it has greatly added to the population problem."

The DDT battle in Africa today is still against that Malthusian outlook expressed so bluntly by Alexander King. Today, however, most of the opponents of DDT don't openly argue that we should kill off the "surplus" people; instead they argue that we must protect the environment, keep Africa pristine. In the words of one Ugandan living in Toronto, writing an open letter to Uganda's President against the use of DDT: "Mr. President, Uganda retains relatively pristine lakes and rivers and beautiful landscapes that yield abundant food supplies for domestic consumption and export. Moreover, Uganda is currently a leader in organic farming of desirable products such as the succulent pineapples grown in Kangulaumira in Kayunga District, and the banana in Mukono district. By avoiding the use of pesticides and fertilizers, Uganda is poised to break into European and North



A typical malaria victim in 1950, before DDT was widely used. The child's spleen is enormously enlarged, one of the symptoms of malaria infection.

American markets where organic food products fetch exorbitant prices.”

This market argument is expressed by DDT opponents throughout the region: European restrictions on pesticide residues mean that African countries will have to monitor for chemical residues—and lose export markets for all kinds of exports, including fish and tobacco, if there are DDT residues.

This argument is fallacious. The point of spraying the inside walls of houses is that a very limited amount (2 grams per square meter) of DDT is used in a solution that is carefully controlled. (This is called indoor residual house spraying, or IRS.) There is no DDT sprayed outside. As studies have shown, the mosquito vectors that carry malaria (in South Africa it is *Anopheles funestus*) rest on the inside house walls and bite human beings at night. These mosquitoes either are killed by contact with DDT on the sprayed wall, or repelled by the DDT, and do not stay around to bite the inhabitants. This latter effect is known as “excito-repellency,” and has

been shown to be a dominant way that DDT controls malaria-bearing mosquitoes, in addition to killing them on contact.¹

Morally, the save-the-environment-and-forget-the-people argument is outrageous. The First Secretary at the Washington Embassy of one large African nation, said, “how can they say this when people are dying of malaria, and we know that DDT will contain the spread?” He recalled the 1960s, when he was growing up in Africa, when DDT was in use and had completely wiped out mosquitoes and malaria in his region. “What is the human cost of not using DDT? Look at the number of lives we are wasting. We should use DDT until there is something better.”

Is There Something Better?

The history of the “Roll-Back Malaria” program, sponsored by the World Bank, the World Health Organization, and United Nations agencies, is proof that right now, there is nothing better than DDT for controlling malaria mosquitoes. (For the moment, we will leave aside the question of drug treatment for people with malaria, and the need for public health infrastructure.)² These organizations and other donor groups came up with the idea of stopping malaria by promoting the distribution of bed nets impregnated with insecticides. No insect control measures, no swamp draining, no infrastructure improvement, no personnel training or increase in public health facilities, just bed nets.³ The goal of Roll-Back Malaria in 1998 was to halve the deaths from malaria by the year 2010. As the increase in malaria throughout Africa testifies, this program has been an abysmal failure.

Bed nets are not bad, in themselves. They are a useful auxiliary in a malaria-control program. But they are costly and the pesticides have to be applied frequently. The estimate is that only one child in seven in Africa sleeps under a net, and only 2% of children use a net impregnated with insecticide.

1. See, for example, D. Roberts et al., *Emerging Infectious Diseases*, July-September 1997, p. 300.

2. DDT is essential for fighting malaria, but it is not a magic bullet that will cure the problem. Eliminating mosquito-borne diseases here and around the world requires in-depth public health infrastructure and trained personnel—as were beginning to be in place during the 1950s and 1960s, when DDT began to rid the world of malaria.

To solve the worsening problem as a whole—including AIDS, tuberculosis, and other diseases making a comeback—we must reverse the entire course of the past 30 years’ policymaking, and return to a society based on production, scientific progress, and rationality.

3. This policy of eliminating insecticides, spraying, and traditional public health measures to curb malaria is the same approach now adopted in the United States toward the West Nile Virus. Despite 8,000 cases and more than 200 deaths last year in the United States, the Centers for Disease Control advises that individuals avoid mosquito bites by staying indoors during peak mosquito hours, wearing long sleeves, and using insect repellent.

These are also the guidelines for U.S. troops in Iraq, where DDT use could prevent the transmission of *Leishmaniasis* from sand flies, a terrible disease that has already afflicted 170 soldiers.

A study conducted in Kenya's highlands, reported in the journal *Tropical Medicine and International Health* in April 2002, compared bed net use to indoor residual house-spraying with DDT, and concluded that the spraying program was more effective and cheaper than bed nets.

Are there drawbacks to house spraying? Roger Bate and Richard Tren of Africa Fighting Malaria note that DDT leaves a powdery residue on the walls, and that it is not effective on plastered and painted walls, just on clay, cement, wood, or thatch walls. Also in some places, bedbugs have developed a resistance to it. As Bate and Tren point out, alternative pesticides can be used either along with DDT, to combat the bedbugs, or alone where the housing is more Western-style than traditional African, with painted walls.

Another observer reports that in malarious areas, where some families refused to have their walls sprayed, they changed their minds on the issue when it became clear that people who lived in sprayed houses didn't come down with malaria.

The International Enforcement Against DDT

In 1995, the United Nations Environment Program (UNEP) began an effort to make the ban on DDT worldwide. UNEP proposed to institute "legally binding" international controls banning what are called "persistent organic pollutants" or POPs, including DDT. The environmental pressure groups agitated for a complete ban on DDT use, but the final treaty permitted emergency public health exceptions, with the idea that its use will be phased out in the future.

In May 2004, the POPs treaty went into effect, known officially as the Stockholm Convention on Persistent Organic Pollutants. However, 29 nations (almost all in tropical regions) requested and secured an exemption for DDT use for disease control, and three nations received an exemption to produce DDT for public health use (China, India, and Russia).

The pressure of environmentalist groups, the World Bank, and United Nations agencies, to remove these exemptions and totally ban DDT, makes the current efforts of African nations to bring back DDT a big target for attack. The usual chorus of World Wildlife/Greenpeace polemics against man-made "poisons," has been augmented with a new, more desperate round of scare stories, the latest focusing on semen quality. Ironically, the same Malthusians who want to stop DDT and reduce population growth, are now complaining (without proof) that DDT reduces and damages semen!

The non-governmental agencies, the World Health Organization, the governmental agencies such as the U.S. Agency for International Development (AID), and the various United Nations agencies, such as UNEP, have been shamed by the killer malaria situation into admitting, for public consumption, that DDT is effective and should be permitted—but in practice none of these groups funds any African program that uses DDT. As one U.S. malaria expert told me, "Don't believe what they say about DDT, look at their actions." In fact, these groups exert tremendous pressure on African political and health figures who support DDT. Much of this

The Big Lies About DDT

These lies about DDT are repeated so often in the media, that even reasonable people think they are, or at least might be, true.

Bird population decline: This never happened. The bald eagle and the peregrine falcon were reported to be threatened with extinction decades before the use of DDT. The brown pelican drastically declined three years before DDT was present. Other bird populations *increased* during the years of most widespread DDT use. (The documentation of this can be found in the Audubon Society bird census reports.)

Thinning eggshells: Again, the connection to DDT is not proved. Eggshell thinning is not correlated with pesticide residues. To get thinner eggshells in the laboratory required massive doses of DDT. Other possible causes for eggshell thinning are oil, lead, mercury, stress, dehydra-

tion, temperature extremes, and human intrusion into nests.

Cancer: No correlation has been demonstrated between DDT exposure and the incidence of cancer. There are even studies of men who voluntarily ingested high levels of DDT for two years, who later developed no adverse effects. Many studies found that DDT reduced tumors in animals.

Residues in human beings: The World Health Organization set an acceptable daily intake of DDT for human beings at 0.01 milligrams per kilogram per day. Human ingestion of DDT in the days of its heavy use was estimated to be about 0.18 milligrams per day and 0.0026 milligrams per kilogram of body weight per day. Thus, DDT levels for human beings remained much lower than the acceptable level.

The persistence of DDT is what makes it so effective in killing mosquitoes; one spraying is effective for 9-12 months. It also persists in human fatty tissue in very minute amounts, but in 50 or more years of usage, there has been no proven health damage caused to human beings by DDT.



Entomologist J. Gordon Edwards, featured in *Esquire* magazine for September 1971, eating a tablespoon of DDT, a feat he repeated almost every week in his public campaign to show the safety of DDT. Now in his 80s and an avid mountain climber, Edwards is still campaigning for DDT.

pressure takes the form of spreading old and new lies about DDT to scare people.

As the DDT scare stories escalate, there has also been increased recognition in the West that the mountains of lies about DDT, are, to put it mildly, one-sided—from Rachel Carson's lying book *Silent Spring* in 1962⁴ to the environmentalist diatribes on the Internet, to the standard U.S. school curriculum about pesticides. Even *The New York Times* in its *Sunday Magazine* on April 11 featured the benefits of DDT in an article by editorial board member Tina Rosenberg, titled "What the World Needs Now Is DDT." (To my knowledge, this is the first time in 35 years that *The New York Times* has said *anything* favorable about DDT.) Rosenberg argues that because we successfully used DDT to eliminate malaria and other mosquito-borne diseases in the West, "we forget why we once needed it."

4. For the lies of Rachel Carson, see "The Ugly Truth about Rachel Carson" by Dr. J. Gordon Edwards in *21st Century Science & Technology*, Summer 1992, p. 41-52.

There are also some groups, notably Africa Fighting Malaria, that have championed DDT as a major weapon in combatting malaria. But their material is largely confined to publication in the conservative press, which limits its circulation.

To win the fight against the killer malaria, the African nations need broad-based support from the United States and other Western nations, both financial and political. We can begin by calling the anti-DDT lobby by its proper name: *Genocidalists*. And we can stop tolerating the ignorance and anti-science of the so-called public, and their elected officials, which allows these genocidalists to remain in control of public opinion.

For Further Reading

The Fall 2002 issue of *21st Century Science & Technology* featured DDT on the cover, with articles by Dr. J. Gordon Edwards, "Mosquitoes, DDT, and Human Health," and Dr. Donald Roberts, "To control Malaria, We Need DDT." Other archive articles on DDT are available on the *21st Century* website, www.21stcenturysciencetech.com under Sample Articles.

Richard Tren of Africa Fighting Malaria and Roger Bate have authored many relevant articles on DDT and Malaria, including "South Africa's War Against Malaria: Lessons for the Developing World," published March 25, 2004 by the Cato Institute, and available on the Internet.

J. Gordon Edwards and Steven Milloy have compiled a fact sheet on DDT available on the Internet at www.junkscience.com/ddtfaq.htm.

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- "The Lies of Rachel Carson" by Dr. J. Gordon Edwards Summer 1992, pp. 41-52
- "DDT, *The New York Times*, and Judge Irving Kaufman by Thomas H. Jukes Spring 1992, pp. 8-10
- "Malaria: The Killer That Could Have Been Conquered" by Dr. J. Gordon Edwards Summer 1993, pp. 21-35
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