

**The Importance of Pesticides  
to the Preservation of  
Public Health**

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On a hot August night a finger can slice the air. Its heaviness envelopes anyone brave enough to walk in this hour of dusk. Life moves languidly, affected and panting from the heat. When the sun sinks in the sky and the blanket of warmth falls over the neighborhood, mosquitoes begin their winged adventure: collecting red blood cells from humans and animals alike to feed as a meal to their larvae. Although mosquitoes are an essential part of nature's fragile balance, their bite can be more than just an annoyance. Illnesses with consequences including fatality can be carried by these night flyers, and control of this insect colony is vital for the preservation of human life. Pesticides are an effective method of pest containment. These chemicals are safe for use in the environment and protect human life from disease, illness and annoyance.

Pesticides have received much misguided criticism over the years because some feel that the chemicals used hurt the environment. In fact, this is far from the truth. Routine contact with small dosages of pesticides is not harmful to the environment or the people residing in it. The synthetic chemicals used to spray for mosquitoes (usually malathion, sumithrin, or a combination of similar compounds) are no more dangerous than the natural chemicals we are exposed to and ingest on a daily basis. Plants produce these natural protective toxins as a method of self-preservation, and we consume around 1.5 grams of these daily in food (Most Pesticides Are Natural, 1). Although pesticides used for crops and food has come under fire for being pollutants, they have no more of a presence than the natural chemicals produced non-synthetically in our food. To blame synthetic pesticides for being an environmental contaminant is ignoring the fact that there are many chemicals in nature, and that the man-made variety aren't necessarily the most dangerous. It's much easier to assume that something "natural" doesn't contain anything harmful to humans, but this isn't always true. Humans put themselves in far greater danger (as far as chemical exposure) in the food that they eat daily. A dose of Phenobarbital (a common

sleep aid) is 150 times more potent a cancer-causing agent than Captan, a pesticide. Beer offers many adverse side effects, one of its downfalls being the ethyl alcohol it contains. Ethyl alcohol is 1.8 million times stronger as a cancer-causing compound than Lindane, another pesticide (Green 1). Most write off beer and sleeping aids among the thousands of common household medicines and chemicals that do not present danger. The act of drinking a beverage or taking a sleeping pill to fall asleep does not appear to be as “dirty” as a truck spraying the environment with a chemical; therefore, many assume that the latter is much more destructive, when in actuality, spraying for mosquitoes does more good to the environment and its inhabitants than bad. As far as pesticides consumption goes, the amount of synthetic chemical in nature is so small that pesticide residue cannot even be traced inside a human body. In fact, a common method of spraying for mosquitoes (spraying at dusk to catch the adult mosquitoes mid-flight) uses ultra low volume equipment. This method only sprays up to 1-5 fluid ounces of a chemical within an entire acre (Walker, 4). Such a small amount is far less potent than what is contained in some natural chemicals and toxins found in food, making it less likely to be a dangerous presence in the environment. It is a common misconception that mosquito sprayings involve heavy application of pesticide, but if consumers were informed of the actual amount sprayed, many concerns would be alleviated. Despite the small amount that humans are actually exposed to, levels of pesticides are still lower than what is sanctioned by the government, and the compounds used don't present a great risk to humans when used in the correct amount. In fact, a panel from the National Cancer Institute found that pesticides did not have any link to cancer (Green,1). This fact makes pesticide bans seem highly unnecessary. The danger the chemicals sprayed place on human health is far less dangerous than the cancerous effects of cigarettes that thousands of Americans smoke. Of course, not all types of pesticides come without a price on

human health, but those used on the environment have been researched, tested, and regulated by the government and independent organizations alike to verify their safety. Consumers have no reason to fear for their health from pesticides. Much more concern should be put towards preventing disease from mosquito bites.

Mosquitoes are a problem recognized by Americans, and if the city, state, and federal government did not take care of spraying for the pests, then homeowners would. The homebrew toxins they use are often very dangerous. Kenneth Green, a chief scientist and director of the Risk and Environment Centre at the Fraser Institute explains the risks associated with one type of consumer-made poison: “One homebrew pesticide recipe calls for steeping rhubarb leaves in water. But rhubarb leaves contain oxalic acid, a highly toxic chemical that can cause weakness, burning in the mouth, difficulty breathing, stomach or abdominal pain, nausea, vomiting, diarrhea, seizures and coma” (Green, 2). Not only is rhubarb dangerous because of the potency of oxalic acids it contains, but its danger is twofold: many consumers will not know of the danger in this homebrew until they find out themselves the hard way. With a pesticide sprayed by the city, those administering the chemical are trained in how much to spray, how to keep and store the chemical, and where to spray. With the conventional brands purchased in stores, there are specific instructions along the same lines, including what to do in a case of ingestion or inhalation of the pesticide. Armed with these warnings, consumers are a lot safer than they would be brewing home-concoctions of poison to kill mosquitoes. Leaving the care of mosquitoes up to consumers would also create economical problems. If this burden is placed upon citizens, the cost of home ownership would increase, and consumers would be forced to spend their own time and money on pest management. Kenneth Green points out the shift in income by explaining the consequences of eliminating city-administered pesticides:

As banning pesticides requires more expensive and more manually intensive methods of controlling pests, the redirecting of household income toward lawn and garden care makes it unavailable for use in purchasing other forms of health protection, such as safer, more nutritious food, better medical and dental care, safer housing and so on (Green,1).

Green makes a valid point. He acknowledges the comparatively high cost of home pest removal and even alludes to what damage would take place should consumers be asked to manage pests themselves. While many Americans cannot buy the most nutritious food, or live in the safest areas in the status quo, this extra burden would only make the situation worse by eliminating consumer disposable income. And just because the pest control process will cost the consumers doesn't ensure the effectiveness of the pest control. Most homebrews and methods designed to be administered by the consumer do little to nothing to actually prevent mosquitoes. Edward Walker, Ph. D., of Michigan State University, says, "Outdoor, electric bug zappers with ultraviolet lights do not control mosquitoes. So-called "mosquito plants" do not effectively repel mosquitoes, and are not recommended for that purpose despite advertisements to this effect. Other devices such as those advertised to repel mosquitoes at high frequency sound do not actually repel mosquitoes" (Walker, 5). The system at present, which leaves pest control in the hands of those who are trained in how to administer the chemicals, is not only safer for the consumer and environment, but more efficient as well. Hundreds of researchers make it a career to find the best and safest ways to eliminate pests, and such knowledge produces a good system that works best for society.

Spraying for pests is not only a convenience to eliminate itchy mosquito bites, it saves lives and protects humans from diseases that would be out of control were it not for pest containment. In fact, mosquitoes are more dangerous than the chemicals used to kill them.

Insects carry diseases dangerous to humans and animals alike, and many types of common mosquitoes can be carriers. Roger Nasci, an entomologist working for the Center for Disease Control in Atlanta, Georgia, says “Mosquitoes are the deadliest animals alive because of the diseases they carry” (Threats to Public Health, 1). Some of the most deadly include the St. Louis encephalitis West Nile Virus, yellow fever, and malaria, and they present the greatest risk because humans do not have antibodies to these diseases. In the last year alone, the West Nile Virus infected 4,100 people in the United States and killed 284 (Mosquito Spraying...,1). The fact that over 4,000 people were infected with this fatal disease makes it a major public concern. Suitable pest containment can lessen or eliminate these unnecessary deaths. Similar to the West Nile Virus, encephalitis also presents a danger. In 1975, the year of the epidemic, there were 93 cases of human St. Louis encephalitis and 4 deaths (Walker, 5). This is not an uncommon death toll for an outbreak of encephalitis; however, not every year has an outbreak. Years of outbreak in Michigan include: 1942-1943, 1973-75, 1980-83, 1991, 1993-94, and 1997 (Walker 5). Obviously, mosquitoes aren’t only bothersome, they present significant danger to human life. Even allergic reactions to bites and stings can be hazardous to one’s health, if not fatal. Kenneth Green points out that insects cause a small number of deaths each year from biting humans alone, and that worries about diseases carried by pests is increasing. With the culmination of fears coming together with the realization that mosquitoes can be deadly, the public health department should continue to spray and contain pests. It’s time to let go of the worries that pesticides are dangerous to human life. Over a three year period in nine states (118 million people cumulatively), only 133 people complained of sickness due to pesticides and only two of these cases were classified as definite (Mosquito Sprayings..., 1). When held against the

causalities of mosquito-borne diseases, it's certainly worth spraying to save thousands of lives at the cost of two cases of illness due to an overdose of pesticide.

Large populations of mosquitoes can also impact the economic activity of an area and the quality of life, including recreation, work life, tourism, and outdoor activities. Allen Lowe, the president of Vector Disease Control Inc., explains that mosquitoes can be more than an annoyance:

Not long ago, residents of England, Arkansas, couldn't play softball at night. They locked up their doors at dusk, brought in the dog, and stayed inside, but all that's changed now. They even have a lighted softball field. The difference is that the city has finally gotten its mosquito problems under control...it's unbelievable that a creature as small as a mosquito makes people as miserable as they do. Now, with control programs, it's tolerable in many of these towns (Threats to Public Health, 1).

When mosquito problems are out of control, it does impact the quality of life, no matter how trivial an itchy bite may seem. Outdoor events may no longer be possible and recreation in a certain area may cease. This can cause a smaller economic profit for the city, as well as a lessening of city events because people will be reluctant to spend time outside. Tourism to the area may decrease as a result of the pest population, as the city becomes less fit for human habitation. Spraying to relieve the city of its pest problems will make conditions more manageable without wiping out entire populations of insects. In fact, the mosquito will continue to survive and remain a part of the environment, although contained and controlled.

In conclusion, pests are a problem with which Americans should be concerned. Mosquitoes can be carriers of deadly diseases for both human and animals alike and in the interest of preserving and protecting lifestyles and the environment, pesticides are the optimal

choice. Such chemicals are not dangerous to human life, or the environment, and they are safer for use than many homebrew methods, as well as some of the natural alternatives on the market. Among the general public there is a stereotype that pesticides are “dirty” and this negative belief can slow the solution to America’s pest problems. To pave the way for improvement, more effort should be directed to informing the general public about the benefits and truths of pesticides. Environmental organizations should look into methods of educating consumers about the real-life risks of mosquitoes and the ways in which pesticides work effectively. If citizens were aware of the dangers and the necessity of a mosquito truck spraying chemical, more would understand and support the community effort against pests. Advancement of education on pest control programs should also include methods in which consumers can safely and effectively fight mosquitoes, such as removing stagnant water from property, using a repellent containing DEET, and effectively using commercial repellants. By providing this information, real steps can be taken to reduce the pest population, and many consumer concerns about pest control will be abated.



### **Bibliography**

Green, Kenneth. "In Praise of Pesticides: The Benefits Outweigh the Risks." The Calgary Herald, 12 June 2003.

"Most Pesticides are Natural." Nutrition News Focus, 13 Jan 2003.

"Mosquito Sprayings Unlikely to Cause Serious Health Problems, CDC Report Says." Pesticide and Toxic Chemical News Daily, 15 July 2003.

"Threats To Public Health." Arkansas Democrat-Gazette, 7 June 2000.

Walker, Edward D. "An Introduction to the Mosquitoes of Michigan." Michigan Mosquito Control Association accessed 23 July 2003 <http://www.mimosq.org/general.htm>.