

## Understanding Pollution: The True Impact of Pesticides

Pesticides are a chemical that is designed to kill insects, and it is doing its job; sadly it is wiping out entire populations of animals and insects, and its effects on human health are quite severe as well.<sup>i</sup> Pesticides are quite common, and you most likely have some in your home unless you buy only organically grown food. All food, unless it's organically grown, is sprayed with pesticides, meaning that most fruit or vegetables you have are covered with a layer of pesticides which does not go away after a quick rinse. Apples, lettuce, potatoes and strawberries are some of the foods with the highest pesticide content. Imagine spraying your food with insect spray before eating, that's kind of what it's like. Also, if you're a pet owner and your dog or cat has a flea collar, or you use bug spray you are using a pesticide.<sup>ii</sup> Every year, 1 billion pounds of pesticides are used in the United States alone, and 5.6 billion pounds are used worldwide; and it is estimated that worldwide 25 million agricultural workers are poisoned a year.<sup>iii</sup> Pesticides are damaging not just human health, but are wiping out entire species.



Pesticides, for all of their supposed benefits to humanity, are made of extremely dangerous chemicals that have debilitating effects on humans. In the United States alone 67000 people a year are hospitalized, and 27 die a year from pesticide poisoning.<sup>iv</sup> There are three stages of pesticide poisoning, and they include Mild, Moderate, and Severe.<sup>v</sup> Symptoms of mild pesticide poison are irritation of the nose, throat, eyes or skin, a headache, dizziness, a loss of appetite, thirst, nausea, diarrhea, sweating, a feeling of weakness or fatigue, a sense of restlessness and nervousness,

unexplained changes in mood, and insomnia.<sup>vi</sup> Those, as mentioned previously, are the MILD effects. It's quite a list, and things only get worse I'm afraid. Moderate pesticide poisoning includes such effects as vomiting, excessive salivation, coughing, a feeling of constriction in the throat and chest, cramps in your abdomen, a blurring of your vision, rapidly increased pulse, excessive sweating, trembling throughout your body, a loss of muscle coordination, becoming confused, and a sense of extreme weakness throughout your body.<sup>vii</sup> Still, we are not done. The severe effects of pesticides are an inability to breathe, a buildup of excessive mucous in your air passageways, pinpoint pupils, the appearance of chemical burns on your skin, an increased rate of breathing, a loss of reflexes, the twitching of your muscles, unconsciousness, and ultimately, death.<sup>viii</sup> The above effects are just the noticeable effects of pesticide poisoning. Other, long term effects include an increased rate of cancer, the possibility of birth defects, the chance of damage to your genetic code, liver failure, and injury to the reproductive systems including sterility, and nerve damage.<sup>ix</sup> We use pesticides in our yards, parks, and on our food supply...I'm beginning to wonder if that's a good idea.



Pesticides effects on animal wildlife are even worse than those on humans, at least in terms of the long term effects on animal populations, and some 7 out of 10 biologists believe that we are in the middle of a great extinction of animals, partly due to pesticides.<sup>x</sup> One of the most common pesticides is known as Atrazine, and more than 75 million pounds of it are used every year on farms in the United States.<sup>xi</sup> Atrazine it is having a devastating effect on frog populations. Did

you ever see Jurassic Park? In the movie they use frog DNA to complete the genetic chain of the dinosaurs. All of the dinosaurs in the park were supposed to be female, but because of the frog DNA the dinosaurs were able to change their sex into males. Well, atrazine is forcing a similar change on frogs; except atrazine is really making many of the frogs turn into females, and this is obviously having an effect on their population size.<sup>xii</sup> Atrazine is banned in Switzerland, and the Environmental Protection Agency is currently conducting a review of the pesticide.<sup>xiii</sup> You may be thinking, so what they're frogs. Well, frogs, like every other animal, have an effect on their ecosystems. With the decline of the frog population the level of algae in rivers and streams is rising, and this is impacting the other organisms who call those rivers and streams home.<sup>xiv</sup>



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Another animal species that is being devastated by pesticides is honey bees. Since 2006 bee populations have fallen roughly 30% a year, and while scientists are still trying to figure out exactly what is causing this death rate, many are convinced that pesticides are, at least partly, to blame.<sup>xv</sup> In fact, certain countries such as France, Germany, and Italy have banned what are called neonicotinoids, a pesticide which is less harmful to animals, but more harmful to insects than regular pesticides.<sup>xvi</sup> Bees in those countries are beginning to recover to some extent. Now, I'm not personally a fan of bees, but they are the great pollinators. Roughly 1/3 of all food grown worldwide relies upon bees to pollinate.<sup>xvii</sup> Just a sample of some of the foods and other products that bees are essential for include peaches, apples, strawberries, onions, cherries, coffee, cotton, vanilla, and cocoa.<sup>xviii</sup> Needless to say, bees are a very important part of the ecosystem, our food

supply, and since food is sold, the world's economy. 30% of the population a year dying means that something is seriously wrong, and if we don't want to lose our apples, chocolate, coffee, and many other foods then we need to do something.

Pesticides are used primarily to protect our crops from insects and other pests as they grow. It's a commendable goal as our food supply is very important, and insects have been known to devastate crops in the past. However, sometimes the solution to a problem causes more and bigger problems than what it was trying to solve. That is the case with pesticides, but its use will not stop without more of a push. As long as people are not complaining what reason do agricultural firms have to stop the use of pesticides? Not much. People need to be informed about what is being done to, and for, their food supply. We don't live in a perfect world, and problems will always exist. Are insects a threat to crops? Yes, but that doesn't mean that insects don't serve a purpose as is the case with bees. Without bees there are many crops that we wouldn't have. The solution to the problem presented by pesticides will not be an easy one to find, but if people inform themselves, and if people show that they are concerned then change is possible.

### About the Author



**Dominick Principe** is a graduate of Rowan University with dual Bachelor Degrees in Elementary Education and Writing Arts. He is a prolific reader who devours any book put before him, and feels that life is one great long book without an end. He fills his hours constantly exploring new information, and seeking to educate himself in the ways of the world. He puts all of that knowledge and his passion for learning to good use teaching English as a second language to students of all ages. When his nose isn't buried in a book, or in class teaching, then he can generally be found typing away at his computer working on some random piece of writing that he was inspired to do.

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<sup>i</sup> "Learn About Chemicals Around Your House." *EPA*. Environmental Protection Agency. Web. 30 Nov. 2014. <<http://www.epa.gov/kidshometour/pest.htm>>.

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<sup>iii</sup> *Pesticides Use and Exposure Extensive Worldwide*. Web. 30 Nov. 2014. <<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2946087/>>.

<sup>iv</sup> "Public Health Risks Associated with Pesticides and Natural Toxins in Foods." *Radcliffe's IPM World Textbook*. Web. 30 Nov. 2014. <<http://ipmworld.umn.edu/chapters/pimentel.htm>>.

<sup>v</sup> "What Kinds of Health Effects Are Associated with Pesticides?" *Pesticides*. Canadian Centre for Occupational Health and Safety. Web. 30 Nov. 2014. <[http://www.ccohs.ca/oshanswers/chemicals/pesticides/health\\_effects.html](http://www.ccohs.ca/oshanswers/chemicals/pesticides/health_effects.html)>.

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