*Pests and Pesticides*

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| On May 17, 2014, a young man in Ohio died from consuming a dangerous chemical. This chemical is far more potent than the pesticide Round Up, perhaps the most widely used synthetic pesticide today. That lethal chemical, was caffeine. |  |
| Yes, caffeine is a lethal substance. Researchers often measure the danger of a chemical by exposing laboratory animals to different amounts of the chemical and calculating the dose that kills half of the animals. This is referred to as LD50 (for lethal dose for 50% of lab animals).The LD50 for caffeine is 192 mg. Much less than that for the pesticide Round Up, which is 4,320 mg. So caffeine is over 22 times more lethal than one of the world’s most popular synthetic pesticide. |  |
| But of course, this young man’s death was an aberration. The vast majority of Americans drink caffeine every day and suffer no problems. The difference is that we consume caffeine in our coffee and soda, which contains very low levels of caffeine. This unfortunate young man acquired powdered caffeine, and as an FDA spokeswoman remarked: |  |
| “The difference between a safe amount and a lethal dose of caffeine in these powdered products is very small.” |  |
| This is how we should think about synthetic pesticides in agricultural production. It matters little whether we use pesticides, or which pesticides we use, but what does manner is the manner in which the pesticides are applied. |  |
| In the next reading you will learn about the many benefits pesticides provide, the many health harms it could inflict if used irresponsibly, and the regulations helping to ensure they are not used irresponsibly. |  |
| If you are like me, you will come away believing that if our research on the effects of pesticides is solid, and if we do a good of enforcing regulations on pesticide use, there is little to fear from pesticides.  |  |
| But if you believe a hole in the science exists, or if you believe regulation enforcement is lacking, then the use of synthetic pesticides in agriculture can be a frightening thought. |  |
| Of course, if regulations are not enforced, use of natural pesticides on organic farms could also be dangerous, and yes, organic farms do use pesticides. |  |
| Think about it like this. Where is a safer place for a six year old child to play: the swimming pool or the playground. Certainly, the swimming pool could be a dangerous place for a six year old to play without an attentive lifeguard, but public pools know this and so they do hire good, multiple lifeguards. Contrast this to the playground, which seems so safe that parents often spend their time texting rather than watching their children. |  |
| I have never seen a child in danger at a public swimming pool, but I have seen a child run into a dangerous road because his parent was not watching him. |  |
| If we are good stewards of children, both the pool and the playground should be very safe places, so safe there is little need to rank one as more safe than the other. |  |
| Yet, if you know the children will *not* be watched well, you want them playing at the playground instead of the pool. |  |
| And so it is with pesticides. If you conclude, like me, that the EPA does regulate pesticides well, then you think of regular and organic food as both being very safe. But if you believe EPA does not do a good job, then you might be willing to pay more for organic food. |  |
| And I do encourage you to disagree with me if that is how you feel, and I encourage you to engage in respectful debates about the use of pesticides. After all, pesticides are safe today because people were willing to argue about it in the past. |  |
| When synthetic pesticides (pesticides made in big factories using advanced chemistry) were first invented they were used as if they posed no health hazard. In 1945 they were literally spraying people directly with the pesticide DDT at Jones Beach in New York. |  |
| Some scientists were trying to call attention to the potential dangers but were ignored. Then came the 1962 book *Silent Spring* by Rachel Carson, a scientist and writer who set about demonstrating the potential harms of pesticides. |  |
| Thus began a bitter debate about pesticides. Really bitter. Carson was attached personally by pesticide companies. She was even referred to as a communist, which back then was as bad as being called a racist is today. |  |
| However petty and unfair these attacks were, they were symbolic of just how useful pesticides were in protecting crops and keeping food prices low. |  |
| Let me give you an idea of just how person the attacks on Carson was, and how important pesticides seemed to some people. |  |
| Consider this letter to the editor of the *New Yorker* in 1962.Miss Rachel Carson’s reference to the selfishness of insecticide manufacturers probably reflects her Communist sympathies, like a lot of our writers these days. We can live without birds and animals, but, as the current market slump shows, we cannot live without business. As for insects, isn't it just like a woman to be scared to death of a few little bugs! As long as we have the H-bomb everything will be O.K. | Show the quote below Miss Rachel Carson’s reference to the selfishness of insecticide manufacturers probably reflects her Communist sympathies, like a lot of our writers these days. We can live without birds and animals, but, as the current market slump shows, we cannot live without business. As for insects, isn't it just like a woman to be scared to death of a few little bugs! As long as we have the H-bomb everything will be O.K.—Letter to the editor of *New Yorker* in 1962 about Rachel Carson’s book *Silent Spring.* Source: Walsh, Lynda. 2013. *Scientists as Prophets*. Oxford University Press. Page 127. |
| So see here how ignoble the debate became, but at the same time the letter does represent just how important pesticides were seen to the economy and the food supply. |  |
| Well, today we have learned how to host this debate in a more rational and respectful manner. Our regulators acknowledge the important role of pesticides in agriculture—especially its role in providing affordable fruits and vegetables—and they take these benefits into account when forming regulation. Of course, our regulators not only acknowledge the dangers that pesticides pose, but conduct experiments on animals to determine exactly how dangerous they are. |  |
| We have such effective regulations today because people on both sides of the issue were able to engage, even argue. And we must continue to do so today. Controversy is not always a bad thing. And when it comes to pesticides, I’m glad there is controversy about its use, because it forces us to engage and constantly reevaluate its proper role in agriculture. Fortunately, today these debates are frequently facilitated by science, as those favoring and opposing their use seek to bolster their case through scientific evidence, not personal, petty attacks. Even those whose arguments are not scientific in nature, strive to make them at least sound scientific.We live in a scientific age, and appropriately, pesticide controversies are frequently held in scientific writings. |  |
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