
From: Heather Spalding
Sent: Monday, May 08, 2017 9:06 AM
To: Pesticides
Cc: Jo Ann Myers
Subject: request for distribution to BPC members

Hi Megan,

I'm sorry to send this so late but I dropped the ball. The MOFGA Public Policy Committee was hoping to have the Pesticide Primer that we maintain on our website included in the materials sent to the BPC members. I'm hoping that there is still time. The link to the primer is here:

<http://www.mofga.org/Programs/PublicPolicyInitiatives/PesticidesAction/PesticidesQuiz/tabid/527/Default.aspx>

Sharon Tisher, pulled this primer together and provides updates to us regularly. Sharon is a lecturer in the School of Economics and the Honors College of the University of Maine, where she teaches environmental law and energy policy courses. She received her B.A. and J.D. from Harvard University. She is a former MOFGA president, chaired our Public Policy Committee for 10 years and continues to serve on the committee.

Thanks Megan!

Heather

"Every aspect of our lives is, in a sense, a vote for the kind of world we want to live in."
- Frances Moore Lappé


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A Pesticides Quiz and Primer: 2017 Update

How much do you know about pesticides and your health?

By Sharon S. Tisher, J.D.

True or False:

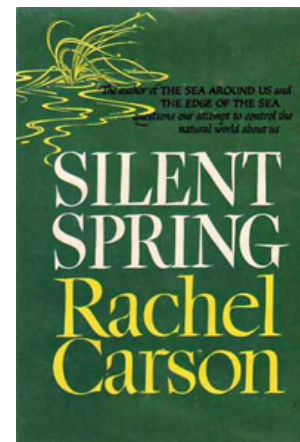
1. Rachel Carson's 1962 best seller, "Silent Spring," was a wakeup call that led to a reduction in pesticide use in the United States. **Answer**
2. Pesticides that have been EPA-approved for use by farmers ("EPA-registered") are "safe" when used as directed. **Answer**
3. When the EPA looks at a pesticide to decide whether to register it for use in the United States, its primary concern is to ensure that the chemical presents no significant human health or environmental risks. **Answer**
4. The EPA performs toxicity tests on pesticides before registration. **Answer**
5. The federal government prohibits use of pesticides known to cause cancer. **Answer**
6. The EPA takes the necessary precautions to ensure pesticide levels are safe for our infants and children. **Answer**
7. "Weed and Feed" and other combinations of fertilizers and pesticides are a safe, environmentally responsible and effective means to give your lawn all the care it needs to thrive. **Answer**
8. Cancer is the primary risk from chronic, longterm exposure to pesticides. **Answer**
9. The "Inert Ingredients" included in pesticides are biologically inactive and hence not hazardous. **Answer**
10. Pesticides may be used in Maine only if they have gone through the EPA's registration process. **Answer**
11. Washing and peeling fruits and vegetables removes all or most pesticide residues. **Answer**
12. Imported fruits and vegetables are more likely to have pesticide residues than domestic. **Answer**
13. You can help increasingly threatened pollinator insects by cultivating bee-friendly plants in your garden. **Answer**
14. Using "antibacterial" or "antimicrobial" soaps is not necessarily the best way to keep your family healthy. **Answer**
15. Eating certified organic food or growing your own food organically is the best way to minimize exposure to pesticides in your and your children's diet. **Answer**
16. The 1996 Food Quality Protection Act has effectively addressed the fundamental inadequacies of our pesticide regulatory system: taking into account the special vulnerability of infants and children, the non-cancer risks such as endocrine disruption, and the cumulative effects of multiple exposures of different pesticides in our diets, our home and working environments, our air and water. **Answer**
17. You have no way of knowing whether and when your child's school or school grounds are being treated with pesticides. **Answer**
18. Your neighbors don't have to tell you when they're applying pesticides, and you have no way to stop them, even if the pesticides make you sick when they drift onto your property. **Answer**
19. Maine municipalities have no power to regulate pesticide use. **Answer**

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Answers

1. Rachel Carson's 1962 best seller, "Silent Spring," was a wakeup call that led to a reduction in pesticide use in the United States.

False: Rachel Carson's book raised public consciousness and understanding of the risks of pesticides and (a decade later) led to the cancellation of the registration of DDT and several other persistent organic and highly toxic pesticides (although they continued to be manufactured for use abroad). However, according to EPA estimates, 1.25 billion pounds of pesticide active ingredients were sold in 1995 in the United States, more than double the 540 million pounds sold in 1964. Adjusted for inflation, U.S. pesticide expenditures grew about 3 percent annually from the 1970s to the 1990s. The percentage of crop acres treated with herbicides rose from about 50 percent in the 1960s to



more than 96 percent in the 1990s. (Benbrook, C.M., "Pest Management at the Crossroads," Consumers Union, 1996, at 8184.)

The most recent EPA report of pesticides sales in the United States reports that pesticide use decreased 8 percent from 1.2 billion pounds active ingredient in 2000 to 1.1 billion pounds in 2007.

(https://www.epa.gov/sites/production/files/2015-10/documents/market_estimates2007.pdf) This decrease was mainly in the agricultural sector and is probably largely due to wider use of genetically engineered crops that incorporate pesticides and that are not counted in these sales reports.

Charles Benbrook notes, however, "While Bt corn and cotton have reduced insecticide applications by ... 123 million pounds [between 1996 and 2011] ... , resistance is emerging in key target insects and substantial volumes of Bt Cry endotoxins are produced per hectare planted, generally dwarfing the volumes of insecticides displaced."

Benbrook also concludes, "Overall, since the introduction of GE [genetically engineered] crops, the six major GE technologies have increased pesticide use by an estimated 183 million kgs (404 million pounds), or about 7%. The spread of GR weeds [weeds resistant to the herbicide glyphosate, the active ingredient in Roundup herbicide] is bound to trigger further increases, e.g., the volume of 2,4-D sprayed on corn could increase 2.2 kgs/ha by 2019 (1.9 pounds/acre) if the USDA approves unrestricted planting of 2,4-D HR [herbicide-resistant] corn." (Benbrook, C.M., Impacts of genetically engineered crops on pesticide use in the U.S. – the first sixteen years, *Environmental Sciences Europe 2012*, 24:24; <http://www.enveurope.com/content/24/1/24>)

The brightest news in the EPA report is that, thanks to stricter regulation under the Food Quality Protection Act of 1996 (FQPA), use of organophosphate pesticides, potent neurotoxins, decreased 55 percent in the United States from 1997 to 2007.

In its collection of the 100 most important people of the 20th century, *Time* magazine said: "Before there was an environmental movement, there was one brave woman and her very brave book." The hundredth anniversary of Carson's birth was celebrated on May 27, 2007, with the recognition that the struggle for truth and caution that she pioneered is ongoing. In *The New Yorker*, Elizabeth Kolbert wrote, "As much as any book can, "Silent Spring" changed the world by describing it," but, "Six years into the Bush Administration, it's basically the ant wars all over again. At key agencies, a disregard for inconvenient evidence seems to be a prerequisite." (*The New Yorker*, May 28, 2007, Page 24) Meanwhile, Senator Tom Coburn from Oklahoma blocked a resolution to laud Carson in Congress, blaming her for using "junk science" to turn the public against DDT. (*Bangor Daily News*, May 24, 2007, Page A3).

2. Pesticides that have been EPA-approved for use by farmers are "safe" when used as directed.

False: Even the EPA concedes that its pesticide registration process is no guarantee of safety. EPA regulations specifically prohibit manufacturers of pesticides from making claims such as "safe," "harmless" or "nontoxic to humans and pets" with or without accompanying phrases such as "when used as directed." (40 CFR sec. 156.10(a)(5)(ix))

3. When the EPA looks at a pesticide to decide whether to register it for use in the United States, its primary concern is to ensure that the chemical presents no significant human health or environmental risks.

False: The legal standard for registration set down by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is, unlike most other environmental statutes, a "risk/benefit" standard. EPA must register pesticides if they do not pose "unreasonable risk to man or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide." (7 USC secs. 136(bb) and 136a(c)(5)(C)) This means that if a pesticide presents substantial benefits to farmers in terms of increased yields or decreased labor costs, those benefits are weighed against health and environmental risks. Even if there are substantial health risks, the EPA may decide the economic benefits outweigh the risks. The federal Food Quality Protection Act of 1996 (FQPA) did away with the economic benefit analysis for new tolerances for dietary risk but left it unchanged for human occupational exposures and environmental risks.

4. The EPA performs toxicity tests on pesticides before registration.

False: Toxicity tests are performed neither by the EPA nor by independent laboratories contracting with the EPA. Pesticide manufacturers provide the data on which the EPA bases its judgments. An inherent conflict of interest exists between EPA's need for unbiased data and the manufacturers' need for data that show their products are not hazardous. For examples of biased and fraudulent testing, see *Journal of Pesticide Reform*, Summer 1997, Page 7. Manufacturers contend that fear of lawsuits keeps them honest, but this argument hardly holds water for long-term, chronic consequences of pesticide exposure, such as cancer or decreased sperm counts, which show up years after exposure.

A March 2013 study by the Natural Resources Defense Council found that EPA oversight of manufacturer toxicity testing was lacking in many cases: "the government has allowed the majority of pesticides onto the market without a public and transparent process and in some cases, without a full set of toxicity tests, using a loophole called a conditional registration. In fact, as many as 65 percent of more than 16,000 pesticides were first approved for the market using this loophole." The report included case studies of two pesticides – clothianidin and nanosilver – to show how conditional registration has been misused.

(<http://www.nrdc.org/health/pesticides/files/flawed-epa-approval-process-IB.pdf>)

5. The federal government prohibits use of pesticides known to cause cancer.

False. In 2010, the President's Cancer Panel, a congressionally mandated panel of experts working under the auspices of the U.S. Department of Health and Human Services, the National Institutes of Health and the National Cancer Institute, released a landmark report, "*Reducing Environmental Cancer Risk, What We Can Do Now.*" A letter by the authors to President Obama concluded that the U.S. government has "grossly



Rachel Carson, author of *Silent Spring*



underestimated" the "true burden of environmentally induced cancers." (<http://abcnews.go.com/Health/Wellness/cancers-environment-grossly-underestimated-presidential-panel/story?id=10568354>) The report noted, "Approximately 40 chemicals classified by the International Agency for Research on Cancer (IARC) as known, probable, or possible human carcinogens, are used in EPA-registered pesticides now on the market. Some of these chemicals are used in several different pesticides ... Thus, the total number of registered pesticide products containing known or suspected carcinogens is far greater than 40, but few have been severely restricted in the United States ... Pesticides ... approved for use by the U.S. Environmental Protection Agency (EPA) contain nearly 900 active ingredients, many of which are toxic. Many of the solvents, fillers, and other chemicals listed as inert ingredients on pesticide labels also are toxic, but are not required to be tested for their potential to cause chronic diseases such as cancer." (President's Cancer Panel Report, Page 45, http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf)



Among the formal recommendations of the report are that families reduce their exposure to pesticides by "choosing, to the extent possible, food grown without pesticides or chemical fertilizers and washing conventionally grown produce to remove residues. Similarly, exposure to antibiotics, growth hormones, and toxic run-off from livestock feed lots can be minimized by eating free-range meat raised without these medications if it is available." (President's Cancer Panel Report, Page 112)

The National Cancer Institute (NCI) reports that, compared with the general population, "the rates for certain diseases, including some types of cancer, appear to be higher among agricultural workers, which may be related to exposures that are common in their work environments. For example, farming communities have higher rates of leukemia, non-Hodgkin lymphoma, multiple myeloma, and soft tissue sarcoma, as well as cancers of the skin, lip, stomach, brain, and prostate." Since 1993, the NCI has been evaluating the role of agricultural exposures to pesticides and other chemicals in the development of cancer. Thus far the epidemiological study has raised red flags about a number of pesticides, including two widely used herbicides, imazethapyr and atrazine. (<http://www.cancer.gov/cancertopics/factsheet/Risk/ahs>)

Beyond Pesticides reports that "[w]hile agriculture has traditionally been tied to pesticide-related illnesses, 19 of 30 commonly used lawn pesticides and 28 of 40 commonly used school pesticides are linked to cancer." (<http://www.beyondpesticides.org/health/cancer.php>) The Beyond Pesticides website links to specific research reports, broken down by type of cancer.

In March 2015, the International Agency for Research on Cancer, an arm of the World Health Organization, stunned pesticides proponents by declaring the active ingredient in Roundup, glyphosate – one of the world's most popular weed killers – along with the widely used insecticides Malathion and Diazinon, "probable carcinogens." (<http://www.iarc.fr/en/media-centre/iarcnews/pdf/MonographVolume112.pdf>) The classification is not binding on governments. In September 2016, the EPA announced that it did not believe that glyphosate was a probable carcinogen. In 2017, Monsanto was ordered to disclose internal emails and email exchanges with federal regulators in a lawsuit by people who claimed they contracted non-Hodgkin's lymphoma from exposure to Roundup. According to The New York Times, "The records suggested that Monsanto had ghostwritten research that was later attributed to academics and indicated that a senior official at the Environmental Protection Agency had worked to quash a review of Roundup's main ingredient, glyphosate, that was to have been conducted by the United States Department of Health and Human Services. The documents also revealed that there was some disagreement within the E.P.A. over its own safety assessment." (Danny Hakim, "Monsanto Weed Killer Roundup Faces New Doubts on Safety in Unsealed Documents," The New York Times, March 14, 2017, https://www.nytimes.com/2017/03/14/business/monsanto-roundup-safety-lawsuit.html?_r=0, see also, <https://www.nrdc.org/experts/jennifer-sass/split-within-epa-glyphosate-carcinogenicity>).

Ironically, in the same month as these disclosures, the Trump Administration USDA decided to scrap plans in the works for over a year to test 315 samples of corn syrup, which is predominantly produced from Roundup Ready corn, for residues of glyphosate. (<http://glyphosate.news/2017-04-06-usda-scrubs-plan-to-test-foods-for-dangerous-levels-of-monsantos-glyphosate.html>, http://www.huffingtonpost.com/margie-kelly/genetically-modified-food_b_2039455.html)

A compilation of pesticides sales by agricultural dealers in Maine for the year 2000 reported a total of 880,095 pounds of pesticide active ingredients that were then classified as known or likely carcinogens. (Maine Board of Pesticides Control, unpublished reports) The Board of Pesticides Control no longer tallies annual pesticides sales in Maine.

6. The EPA takes the necessary precautions to ensure pesticide levels are safe for infants and children.

False. Developing fetuses, newborns and young children are among the most vulnerable to pesticides in our population, and the least protected. A 1993 study by the most preeminent scientific body in the United States, the National Research Council of the National Academy of Sciences, found that "infants and children differ both qualitatively and quantitatively from adults in their exposure to pesticide residues in foods. Children consume more calories of food per unit of body weight than do adults. But at the same time, infants and children consume far fewer types of foods ... The current regulatory system does not, however, specifically consider infants and children ... Current testing protocols do not, for the most part, adequately address the toxicity and metabolism of pesticides in neonates and adolescent animals or the effects of exposure during early developmental stages and their sequelae in later life." (National Research Council, "Pesticides in the Diets of Infants and Children," 1993, Pages 1 13; <http://www.nap.edu/openbook.php?isbn=0309048753>)

The Council recommended a 10-fold additional safety factor in setting pesticide tolerances for pesticide residues on foods to protect children. The 1996 federal Food Quality Protection Act mandated revision of tolerances to accomplish this. In 2006 the EPA announced that it had completed a 10-year review of U.S. pesticide safety, focusing on the special risks presented to children. However, environmental activists

A Generation in Jeopardy
How pesticides are undermining
our children's health & intelligence



OCTOBER 2012
PESTICIDE ACTION NETWORK NORTH AMERICA

and some of the EPA's own scientists question whether the EPA had enough information to set safe tolerance levels. (*See answer to Q. 16.*)

Concern continues to grow that widespread exposure to pesticide residues in food and home environments contributes significantly to growing rates of childhood cancers, asthma, obesity, autism, and other endocrine and neurodevelopmental disorders in the United States and abroad. (See generally, Andre Leu, "The Myths of Safe Pesticides" (2014), Pages 13-25, 40-47; Pesticide Action Network, "A Generation in Jeopardy: How pesticides undermine our children's health and intelligence," 2012; <http://www.panna.org/publication/generation-in-jeopardy>)

In 2010 the President's Cancer Panel concluded: "There is a critical lack of knowledge and appreciation of environmental threats to children's health and a severe shortage of researchers and clinicians trained in children's environmental health." (http://deainfo.nci.nih.gov/advisory/pcp/annualReports/pcp08-09rpt/PCP_Report_08-09_508.pdf, Page 98)

A 2016 study found significant decreases in I.Q. and verbal comprehension in seven year olds whose mothers had, during pregnancy, lived within approximately 1 km from agricultural fields in California where multiple neurotoxic pesticides were used. ("Prenatal Residential Proximity to Agricultural Pesticide Use and IQ in 7-Year-Old Children," by Robert B. Gunier et al., *Environmental Health Perspectives*, 7/25/2016; <http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2016/7/EHP504.acco.pdf>)

For a compelling photo essay on the impact of pesticides on children in farming communities in Argentina, where birth deformities increased four-fold after 10 years of intensive cultivation of genetically engineered Roundup Ready soybeans, see "Legal Toxins" by Alvaro Ybarra Zavala (<https://vimeo.com/102238995>, see also http://www.i-sis.org.uk/Devastating_Impacts_of_Glyphosate_Argentina.php)

7. "Weed and Feed" and other combinations of fertilizers and pesticides are safe, environmentally responsible and effective means to give your lawn all the care it needs to thrive.

False. These products fundamentally contradict the principles and practices of organic cultivation as well as of Integrated Pest Management (IPM), which require least toxic means of pest management to be applied only after a pest problem has been identified, and not routinely. For this reason, and based on a recommendation of Maine Board of Pesticides Control staff, Governor John Baldacci took the important step of banning these fertilizer/pesticide mixtures, and other pesticides used for purely cosmetic purposes, for use on state-owned and managed office buildings and their grounds. ("An Order Promoting Safer Chemicals in Consumer Products and Services," February 22, 2006, http://www.maine.gov/tools/whatsnew/index.php?topic=Gov_Executive_Orders&id=21193&v=Article)



Unnecessary use of lawn and yard care synthetic chemicals is a skyrocketing problem in Maine. According to the Maine Board of Pesticides Control, use of yard care pesticides in Maine increased sevenfold from 1995 to 2007; more than 6.2 million pounds of yard care pesticides were brought into Maine in 2007. (http://www.southberwickmaine.org/public_documents/southberwickme_dpw/KennebecArticle_May2010.pdf)

For information and resources on how to have a beautiful yard with fewer or no synthetic chemicals, see the BPC's *Yardscaping* booklet: <http://www.maine.gov/dacf/php/pesticides/yardscaping/index.htm>

8. Cancer is the primary risk from chronic, longterm exposure to pesticides.

False. Neurotoxicity, as well as risks to the human immune, reproductive and endocrine systems, may be equally or even more significant.

A 2006 analysis published in the distinguished medical journal *The Lancet* concluded that tiny amounts of common pollutants, including pesticides, may be causing a "silent pandemic" of neurological disorders impairing development of fetuses and infants. Among the potential consequences are lower IQ scores and conditions such as autism, attention deficit disorder and cerebral palsy. (Grandjean and Landrigan, "Developmental neurotoxicity of industrial chemicals," *The Lancet*, November 8, 2006; <http://www.env-health.org/IMG/pdf/06t9094page.pdf>)

A 2014 follow up study by the same authors analyzed strong epidemiological evidence of the neurotoxicity of six industrial chemicals, including the organophosphate pesticide chlorpyrifos, banned for residential uses and food crops in the United States under the FQPA but still used for non-food purposes here and in food production in many other countries. The authors concluded, "To control the pandemic of developmental neurotoxicity, we propose a global prevention strategy. Untested chemicals should not be presumed to be safe to brain development, and chemicals in existing use and all new chemicals must therefore be tested for developmental neurotoxicity." ([http://www.thelancet.com/journals/lan eur/article/PIIS1474-4422\(13\)70278-3/fulltext](http://www.thelancet.com/journals/lan eur/article/PIIS1474-4422(13)70278-3/fulltext))

A 2016 EPA Human Health Risk Assessment of chlorpyrifos found residues on many foods at levels up to 14,000 percent higher than "safe" limits. ("EPA: Toxic Pesticide on Fruits, Veggies Puts Kids at Risk," by Miriam Rotkin-Ellman and Veena Singla, NRDC, Jan. 6, 2017; <https://www.nrdc.org/experts/miriam-rotkin-ellman/epa-toxic-pesticide-fruitsveggies-puts-kids-risk>; "Chlorpyrifos Revised Human Health Risk Assessment (2016)," U.S. EPA, <https://www.regulations.gov/document?D=EPA-HQ-OPP-2015-0653-0454>)

The pesticide is used on about 40,000 farms on about 50 different types of crops, ranging from almonds to apples. EPA scientists concluded that exposure to chlorpyrifos was potentially causing health consequences, particularly learning and memory declines among farm workers and young children, and the agency in late 2016 proposed to ban all agricultural uses of chlorpyrifos. One of EPA administrator Scott Pruitt's first actions was to reject the proposed ban, commenting that "[b]y reversing the previous Administration's steps to ban one of the most widely used pesticides in the world, we are returning to using sound science in



decision-making – rather than predetermined results." <https://www.nytimes.com/2017/03/29/us/politics/epa-insecticide-chlorpyrifos.html>, <https://www.epa.gov/newsreleases/epa-administrator-pruitt-denies-petition-ban-widely-used-pesticide-0>).

While Rachel Carson wrote of the hormone-disrupting and reproductive effects of pesticides in "*Silent Spring*" in 1962, it took an astonishing 34 years, until the 1996 FQPA, for congress to mandate that the EPA consider these effects in regulating pesticides. It took another nine years before the EPA announced in June 2007 that it would begin screening 73 pesticides, including chlorpyrifos, malathion and atrazine, for their risk of endocrine disruption, once it finalized its standards for review. (72 FR 33486) While some regulatory actions by the EPA under the FQPA have considered endocrine effects, a 2011 report of the Inspector General found that the EPA's Endocrine Disruptor Screening Program, 14 years after passage of the FQPA, had missed many deadlines and "has not determined whether any chemical is a potential endocrine disruptor." (<https://www.epa.gov/office-inspector-general/report-epas-endocrine-disruptor-screening-program-should-establish>) A 2012 study published in *Endocrine Reviews* argued that the approach the EPA was taking to identify endocrine disrupting chemicals and assess their risk was fundamentally flawed, because it relied on the centuries old notion that the "dose makes the poison," or that smaller doses create less risk: "For decades, studies of endocrine-disrupting chemicals (EDCs) have challenged traditional concepts in toxicology ... because EDCs can have effects at low doses that are not predicted by effects at higher doses ... Thus, fundamental changes in chemical testing and safety determination are needed to protect human health." (<http://press.endocrine.org/doi/abs/10.1210/er.2011-1050>) The EPA has largely rejected this assessment, in a draft report praised by the American Chemistry Council.

(<http://www.environmentalhealthnews.org/ehs/news/2013/epa-low-dose>) As of June 2014, the EPA was still figuring out which chemicals it wanted to have tested for endocrine disrupting effects. Not until June 2015 did the EPA publish its first preliminary results for testing for "estrogen receptor bioactivity" on 1,800 chemicals. (<https://www.epa.gov/endocrine-disruption/endocrine-disruptor-screening-program-timeline>) That report cautioned that "[t]hese data do not provide a scientific basis, by themselves, supporting a conclusion that chemicals or substances have potential for endocrine disruption." (<https://www.epa.gov/endocrine-disruption/endocrine-disruptor-screening-program-edsp-estrogen-receptor-bioactivity>)

A comprehensive report by the United Nations Environment Programme and the World Health Organization, "State of the Science of Endocrine Disrupting Chemicals 2012," pointed out the alarmingly "high incidence and the increasing trends of many endocrine-related disorders in humans," including "large proportions (up to 40%) of young men in some countries have low semen quality, which reduces their ability to father children;" "genital malformations, such as non-descending testes (cryptorchidisms) and penile malformations (hypospadias), in baby boys;" "the incidence of adverse pregnancy outcomes, such as preterm birth and low birth weight;" "increased global rates of endocrine-related cancers;" and "the prevalence of obesity and type 2 diabetes [which] has dramatically increased worldwide over the last 40 years." Put simply, the report noted that "[h]uman and wildlife health depends on the ability to reproduce and develop normally. This is not possible without a healthy endocrine system." The report identified industrial chemicals, including pesticides, as a probable cause of these disruptions of the endocrine system: "[c]lose to 800 chemicals are known or suspected to be capable of interfering with hormone receptors, hormone synthesis or hormone conversion. However, only a small fraction of these chemicals have been investigated in tests capable of identifying overt endocrine effects in intact organisms. The vast majority of chemicals in current commercial use have not been tested at all." (<http://www.who.int/ceh/publications/endocrine/en/>).

For a summary of the evidence that pesticides play a significant role in impairing the endocrine system, see Andre Leu, "*The Myths of Safe Pesticides*," 2014, Pages 34-47.

9. The "Inert Ingredients" included in pesticides are biologically inactive and hence not hazardous.

False. Inerts are almost always chemically functional and are added intentionally to enhance the performance of the "active" ingredient. They are generally solvents, emulsifiers, synergists or compounds that in some way make the active ingredient work better. Recent research demonstrates that the inerts not only enhance the intended effect of the active ingredient; they also may enhance its toxicity to humans and wildlife. Hence our regulatory system, which bases safety reviews primarily on testing active ingredients and which fails to even inform consumers of the identity of the inerts, is fundamentally flawed.

In 2006, the attorneys general of 15 states, including Maine, petitioned the EPA to require that inert chemicals be disclosed in pesticides labeling. The petition stated that 360 chemicals used as inerts in pesticides had in fact been identified by the EPA or OSHA as hazardous under regulatory schemes other than the Federal Insecticide, Fungicide, and Rodenticide Act. The petition argued that the public interest in knowing about these hazardous additives trumped any claim the manufacturers asserted about trade secrets: "the public's interest in disclosure of a hazardous ingredient overrides any commercial interest in preserving confidentiality." (<https://ag.ny.gov/press-release/states-petition-epa-require-disclosure-secret-ingredients-pesticides>) In 2009, in response to this and a similar petition by environmental organizations, the EPA requested public input on two alternative proposals regarding inert ingredient disclosure: one to disclose only ingredients identified as hazardous; the other to require disclosure of all inerts. The EPA noted that it "agrees with the petitioners that inert ingredient disclosure should be greatly increased." The EPA proposal astutely noted that disclosure "may lead to less exposure to ... hazardous inert ingredient[s] because consumers will likely choose products informed by the label." In turn, "pesticide producers will likely respond by producing products with less hazardous inert ingredients." (74 FR 68215 – Public Availability of Identities of Inert Ingredients in Pesticides, (http://www.epa.gov/oppr001/inerts/petition_states.pdf Pages 3, 30) In 2009, in response to a lawsuit by a number of environmental organizations, the EPA requested public input on two alternative proposals regarding inert ingredient disclosure: one to disclose only ingredients identified as hazardous; the other to require disclosure of all inerts. The EPA proposal astutely noted that disclosure "may lead to less exposure to ... hazardous inert ingredient[s] because consumers will likely choose products informed by the label." In turn, "pesticide producers will likely respond by producing products with less hazardous inert ingredients." (<http://www.gpo.gov/fdsys/granule/FR-2009-12-23/E9-30408>) When the EPA failed to take further action on this rulemaking for the next three years, on March 5, 2014, the Center for Environmental Health, Beyond Pesticides, and Physicians for Social Responsibility, represented by Earthjustice, sued the EPA. (<http://www.beyondpesticides.org/dailynewsblog/?p=12888>) In the last weeks of the Obama Administration, the EPA announced that it was removing 72 inert ingredients from its list of approved ingredients in pesticide products, noting, "Many of the 72 inert ingredients removed with this action are on the list of 371 identified by the [environmental NGO] petitioners as hazardous." (<https://www.epa.gov/newsreleases/epa-prohibits-72-inert-ingredients-use-pesticides>) On January 9, 2017, the EPA announced that it would begin rulemaking to require that so-called "inert" ingredients be listed on the label with the "more neutral term 'Other ingredients.'" In encouraging manufacturers to substitute "other" for "inert" on their labels before rulemaking becomes final, the EPA noted that "... EPA has long known and acknowledged that some inert ingredients are not benign to human health or the environment. The 'inert' ingredients in some products may be more toxic or pose greater risks than the active ingredient." (PRN 97-6: Use of Term "Inert" in the Label Ingredients Statement, <https://www.epa.gov/pesticide-registration/prn-97-6-use-term-inert-label-ingredients-statement>).



Recent research on the popular herbicide Roundup has focused on disturbing evidence concerning one of its inert ingredients: "About 100 million pounds of Roundup are applied to U.S. farms and lawns every year and until now, most health studies have focused on the safety of glyphosate, the active ingredient in Roundup, rather than the mixture of 'inert' ingredients found in the herbicidal product. In this new study, 'Glyphosate Formulations Induce Apoptosis and Necrosis in Human Umbilical, Embryonic, and Placental Cells,' researchers found that Roundup's inert ingredients amplified the toxic effect on human cells – even at concentrations much more diluted than those used on farms and lawns, and which correspond to low levels of residues in food or feed. One specific inert ingredient, polyethoxylated tallowamine, or POEA, was more deadly to human embryonic, placental and umbilical cord cells than the herbicide itself – a finding the researchers call 'astonishing.' POEA is a surfactant, or detergent, derived from animal fat. It is added to Roundup and other herbicides to help them penetrate plants' surfaces, making the weed killer more effective." (<http://www.beyondpesticides.org/dailynewsblog/?p=1997>) POEA is not one of those inert ingredients removed from permitted use in pesticides in 2016.

Even more disturbing is the fact that after publication of this research, in May 2013, the EPA granted Monsanto's petition to increase maximum residue limits of glyphosate on food and other crops. (78 FR 25396, <http://www.gpo.gov/fdsys/pkg/FR-2013-05-01/pdf/2013-10316.pdf>)

See generally, concerning glyphosate and Roundup, Andre Leu, "The Myths of Safe Pesticides" (2014), Pages 62-79; "Glyphosate," by Dr. Merial Watts et al., Pesticide Action Network, Oct. 2016; <http://pan-international.org/wp-content/uploads/Glyphosate-monograph.pdf>

10. Pesticides may be used in Maine only if they have gone through the EPA's registration process.

False. The Maine Board of Pesticides Control, and other similar agencies in other states, regularly apply to the EPA, at the request of pesticide applicators, for "emergency approval" of unregistered pesticides to meet "special local needs." To accommodate applicators because of administrative delays in formally registering products, these applications are often granted, repeatedly for the same product. These products have been registered for some agricultural and other uses, but not for the "special local needs" use, so no tolerance setting "safe" levels of residue has been set.



11. Washing and peeling fruits and vegetables removes all or most pesticide residues.

False. It may reduce some residues, but definitely not all. A 2017 analysis by the Environmental Working Group, using USDA data, found that nearly 70 percent of the conventional produce samples analyzed – after they had been washed or peeled – tested positive for pesticide residues; every sample of imported nectarines tested and 99 percent of apple samples tested positive for at least one pesticide residue; a single grape tested positive for 15 pesticides; and single samples of celery, cherry tomatoes, imported snap peas and strawberries tested positive for 13 different pesticides apiece. The foods with the highest loads of pesticide contamination were (in declining order) strawberries, spinach, nectarines, apples, peaches, celery, grapes, pears, cherries, tomatoes, sweet bell peppers and potatoes. ("Environmental Working Group's 2017 Shopper's Guide to Pesticides in Produce," <http://www.ewg.org/foodnews/summary.php>)

A 2012 study in Europe also found that washing did little to remove pesticide residues; peeling was more effective, but most vitamins are found in the peels of fruits and vegetables. (<http://www.dailymail.co.uk/news/article-2112767/How-pesticides-persist-wash-fruit-veg.html>)

Washing and peeling would have little effect, moreover, on systemic pesticides (pesticides that are absorbed by plants and distributed throughout all parts of the plants), such as neonicotinoids, introduced in 1998 and growing in use significantly. (<http://www.motherearthnews.com/nature-and-environment/systemic-pesticides-zmaz10onzraw.aspx>)

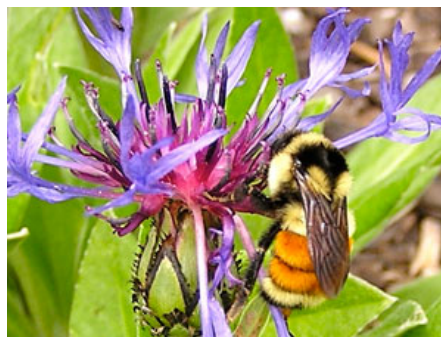
12. Imported fruits and vegetables are more likely to have pesticide residues than domestic.

False. This was thought to be the case, as many pesticides illegal in the United States are still manufactured in the United States and elsewhere for use in other countries. The developing world has a far less comprehensive system of pesticide regulation than the United States. However, a 1999 study by Consumer Reports found that, surprisingly, domestic produce had more, or more toxic, pesticide residues than imported in two-thirds of the cases studied. Domestic peaches had a pesticide toxicity score 10 times higher than imported peaches. (*Consumer Reports*, March, 1999, Page 28)

A 2009 study published in the *Journal of Food Chemical Toxicology* reached similar findings: "Of the 15 pesticides for which quantifiable residues were detected from both domestic and imported fruit and vegetable samples, domestic exposures were significantly higher for 11 pesticides while imported exposures were higher for the remaining four. The five pesticides showing the highest exposures all demonstrated greater domestic exposures than imported exposures." (<http://www.ncbi.nlm.nih.gov/pubmed/19059451>)

13. You can help increasingly threatened pollinator insects by cultivating bee-friendly plants in your garden.

Not necessarily – unless you're very careful about the source of your seeds or plants. A study released in June 2014 by Friends of the Earth, "Gardeners Beware, 2014," revealed that 51 percent (36 out of 71) of "bee-friendly" garden plant samples purchased at top garden retailers (Home Depot, Lowe's and Walmart) in 18 U.S. and Canadian cities contained highly controversial neonicotinoid insecticides – a key contributor to recent bee declines: "Some of the flowers contained neonicotinoid levels high enough to kill bees outright assuming comparable concentrations are present in the flowers' pollen and nectar." (<http://www.foe.org/news/news-releases/2014-06-new-tests-find-bee-killing-pesticides-in-51-percent-of-bee-friendly-plants>) The same month, a meta-analysis of 800 studies by a Task Force on Systemic Pesticides convened by the International Union for Conservation of Nature found that neonicotinoid pesticides "are causing significant damage to a wide range of beneficial invertebrate species and are a key factor in the decline of bees." (<https://www.iucn.org/content/systemic-pesticides-pose-global-threat-biodiversity-and-ecosystem-services>)



In May 2014, a study released by the Harvard School of Public Health replicated a 2012 finding from the same research group linking low doses of the neonicotinoid imidacloprid with Colony Collapse Disorder (CCD), in which bees abandon their hives and eventually die. The new study also found that low doses of a second neonicotinoid, clothianidin, had the same negative effect. The study's findings suggest that the pesticides, rather than mites or other bee pathogens, are a primary factor in triggering CCD. (<http://www.hsph.harvard.edu/news/press-releases/study-strengthens-link-between-neonicotinoids-and-collapse-of-honey-bee-colonies/>) The EPA expects to complete a review various neonicotinoid pesticides in 2018-2019. (<http://www2.epa.gov/pollinator-protection/schedule-review-neonicotinoid-pesticides>)

In 2015, following a campaign spearheaded by Friends of the Earth and supported by MOFGA, both Home Depot and Lowe's committed to phasing out products containing neonicotinoid pesticides. (<http://www.centerforfoodsafety.org/press-releases/3843/lowes-agrees-to-phase-out-bee-toxic-neonicotinoid-insecticides#>, <http://www.commondreams.org/newswire/2015/12/03/home-depot-phase-out-bee-killing-pesticides>).

14. Using "antibacterial" or "antimicrobial" soaps is not necessarily the best way to keep your family healthy.

True. In September 2016, the FDA issued a final rule that prohibits consumer antiseptic wash products (including liquid, foam, gel hand soaps, bar soaps and body washes) containing the majority of the antibacterial active ingredients, which are legally classified as pesticides. The FDA concluded that "there isn't enough science to show that over-the-counter (OTC) antibacterial soaps are better at preventing illness than washing with plain soap and water. To date, the benefits of using antibacterial hand soap haven't been proven. In addition, the wide use of these products over a long time has raised the question of potential negative effects on your health." (<https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm378393.htm>)

Of particular concern is the pesticide triclosan and its chemical cousin triclocarban, which since the 1990s have been added to numerous consumer products, including soaps, body washes, toothpaste, deodorant, facial cleansers and other cosmetics. The Natural Resources Defense Council reports that surveys have found residues of triclosan in more than 75 percent of those tested, and that the chemical has been associated with lower levels of thyroid hormone and testosterone, which could result in altered behavior, learning disabilities or infertility. (<http://www.nrdc.org/living/chemicalindex/triclosan.asp>)

After the ban on washing products, triclosan remains allowed in many other consumer products, including Colgate Total toothpaste and hand sanitizers, as well as surgical scrubs. (https://www.nytimes.com/2016/09/07/well/live/why-your-toothpaste-has-triclosan.html?_r=0)

The National Institutes of Health has awarded a team of researchers at the University of Maine \$420,000 to research the potentially negative effects of triclosan on the body's mast cells – cells that respond to cancer, fight bacterial infections and play a role in central nervous system disorders such as autism. These researchers have also found that triclosan disrupts mitochondria, the energy powerhouses of the cell, in many species, including human skin cells.

(<http://vitalsigns.bangordailynews.com/2014/08/01/public-health/is-your-antibacterial-soap-safe-umaine-researchers-study-common-ingredient/>, email from Professor Julie Gosse, 3/27/17)

15. Eating certified organic food or growing your own food organically is the best way to minimize exposure to pesticides in your and your children's diet.

True, although even some organic food has tested positive for trace residues of synthetic pesticides, as a result of the background exposure to these chemicals in our soils, air, waters and transportation vehicles and storage facilities. Organic foods are much less likely to have residues, and when found, residue levels are well below those found and legally permitted in conventional food. (See Baker et al., "Pesticide residues in conventional, IPM-grown and organic foods: Insights from three U.S. data sets," *Food Additives and Contaminants*, Volume 19, No. 5, May 2002; www.consumersunion.org/food/organicsumm.htm)

A University of Washington study analyzed pesticide breakdown products (metabolites) in pre-school aged children, comparing children eating at least 75 percent organic food with children eating at least 75 percent conventional food. The study found median concentrations of organophosphate metabolites six times lower in the children with the organic diets, and mean concentrations nine times lower, suggesting that some children eating conventional produce had much higher concentrations of metabolites. (See Curl et al., "Organophosphorus pesticide exposure and suburban pre-school children with organic and conventional diets," *Environmental Health Perspectives*, October 13, 2002; <https://cfpub.epa.gov/ncer/abstracts/index.cfm/fuseaction/display.files/fileID/13642>) A 2006 study in *Environmental Health Perspectives* similarly concluded that, "Organic Diets Significantly Lower Children's Dietary Exposure to Organophosphorus Pesticides." (https://www.jstor.org/stable/3436519?seq=1#page_scan_tab_contents)

There have been similar findings for adult populations. A 2015 study of 4,500 adults from six U.S. cities examined long-term dietary exposure to 14 organophosphate pesticides. (Curl et al., "Estimating Pesticide Exposure from Dietary Intake and Organic Food Choices," *Environmental Health Perspectives*, February 5, 2015; <http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2015/2/ehp.1408197.acco.pdf>) The scientists found that people who reported eating organic fruits and vegetables at least occasionally had significantly lower organophosphate residue levels in their urine when compared to people who almost always ate conventionally grown produce.

Since 2009, six major meta-analyses have been published comparing the health and safety of organic versus conventional foods. Only two of these considered pesticide residues, and both found that pesticide residues are four- to five-fold more common in conventional food. The four studies also found higher nutrient levels in organic food. A large study published in 2016 in the *British Journal of Nutrition* found that organic dairy and meat contain about 50 percent more omega-3 fatty acids than conventional products, and a study published in 2014 in the same journal found that organic foods have substantially higher concentrations of a range of antioxidants and other potentially beneficial compounds. (Benbrook, "New Meta-Analysis Identifies Three Significant Benefits Associated With Organically Grown Plant-Based Foods," July 11, 2014;

<http://csanr.wsu.edu/significant-benefits-organic-plant-based-foods/>; <http://www.npr.org/sections/thesalt/2016/02/18/467136329/is-organic-more-nutritious-new-study-adds-to-the-evidence>)

Also keep in mind that some conventionally grown foods are riskier than others. The Environmental Working Group publishes an annual report of the conventional produce highest and lowest in pesticide residues, based on U.S. government testing data. See answer to question 11. EWG's "Dirty Dozen" list of most-contaminated produce for 2017 included apples, strawberries, grapes, celery, peaches, spinach, sweet bell peppers, imported nectarines, cucumbers, cherry tomatoes, imported snap peas and potatoes. Each of these foods contained a number of different pesticide residues and showed high concentrations of pesticides relative to other produce items. EWG's "Clean Fifteen" for 2014 – the produce least likely to hold pesticide residues – were sweet



corn, avocados, pineapples, cabbage, onions, frozen sweet peas, papayas, asparagus, mangoes, eggplant, honeydew melon, kiwis, cantaloupe, cauliflower and grapefruit. (<http://www.ewg.org/foodnews/summary.php>) Also check the Beyond Pesticides resource "Eating with a Conscience," which identifies all the pesticides that can legally be applied to various non-organic food crops in the United States, with links to the health and environmental risk profile of each pesticide. (<http://www.beyondpesticides.org/organicfood/conscience/navigation.php>)

16. The 1996 Food Quality Protection Act has effectively addressed the fundamental inadequacies of our pesticide regulatory system: taking into account the special vulnerability of infants and children, the non-cancer risks such as endocrine disruption, and the cumulative effects of multiple exposures of different pesticides in our diets, our home and working environments, our air and water.

Probably False. The FQPA was hailed on passage by Commerce Committee Chairman Bliley as a "landmark bipartisan agreement that will bring Federal regulation of the Nation's food producers into the 21st century." But the EPA's response to congressional mandates under the FQPA has been fraught with criticism from the beginning. The long, controversial history of regulation of azinphos-methyl (AZM) is a case in point. AZM, an organophosphate, was used on a wide variety of fruits and vegetables, including "wild" blueberries in Maine, most often under the brand name Guthion. In the late 1990s, a number of environmental and farmworker protection organizations resigned from a toplevel EPA advisory committee over dismay at the EPA's decision not to suspend registration of AZM immediately. The EPA had concluded that dietary risk from food alone for AZM exceeded the reference dose "safe" level for nursing infants and children age one to six in the United States., without consideration of other exposures, such as pesticide drift or the cumulative effects of other similar chemicals. However, it opted for minor changes in use of the pesticide rather than suspending it. The August 2, 1999, EPA press release urged the American public to [continue to] eat fruit with AZM residues, even before these "mitigation measures" are implemented: "The food supply is safe; this action just makes it safer." On environmental and worker protection issues, the EPA was somewhat less reassuring: "Azinphosmethyl also poses unacceptable risks to birds, aquatic invertebrates, fish, and terrestrial mammals. It poses a very high risk to aquatic organisms, perhaps the highest among all the organophosphate pesticides. Azinphosmethyl is also one of the most persistent of the organophosphates applied foliarly. The voluntary risk reduction measures should help reduce many of these risks." The press release also noted that "Azinphos-methyl is hazardous to workers ... Estimated risks remain unacceptable despite the use of additional protective clothing, equipment, and engineering controls. Post-application risks to reentry workers greatly exceed EPA's level of concern." (EPA, "Azinphos Methyl Risk Management Decision," August 2, 1999, <https://archive.epa.gov/pesticides/reregistration/web/html/azmfactsheet.html>)



The Environmental Working Group calculated, based on preschoolers' consumption of four foods (apples, pears, peaches and apple juice), that 49,500 preschool children exceed EPA's acute reference dose for azinphosmethyl every day, accumulating to more than 18 million unsafe exposures per year: "Dietary exposure to Guthion alone ... presents more than twice the risk allowed in EPA's 'risk cup' for all [organophosphates]. And Guthion is only the first of at least six organophosphates with a significant dietary risk profile to reach the refined assessment phase within the agency." (Environmental Working Group, "Children are Overexposed to Guthion," April 1999).

In 2006 the EPA at long last announced that it would phase out all uses of azinphos-methyl by 2012, with some uses phased out by 2007. A spokesperson for the United Farmworkers of America noted that the phaseout was welcome, "but it is inexcusable for EPA to allow this pesticide to continue poisoning workers for 6 more years." (Earth Justice press release, November 16, 2006).

The big picture on implementation of the FQPA is one of decidedly mixed results, with some major accomplishments that will have a positive impact on health, and much work remaining to be done. On August 3, 2006, the EPA announced that it had completed its 10-year review of pesticide safety mandated under the FQPA. The EPA reviewed about 230 pesticide active ingredients and 870 inert pesticide ingredients, with nearly 10,000 tolerances. Positive outcomes from this review include phaseouts of residential uses of two highly toxic pesticides, diazinon and chlorpyrifos, and cancellation of 17 organophosphate pesticides. In May 2006, as the EPA was poised to announce completion of its FQPA review, nine presidents of unions representing EPA scientists and risk managers wrote a letter to the EPA administrator, expressing concerns that the EPA was about to give approval for organophosphate and carbamate pesticides that may be neurotoxic, especially in developing fetuses, infants and children. They stated that they were "concerned that the Agency has not, consistent with its principles of scientific integrity and sound science, adequately summarized or drawn conclusions about the developmental neurotoxicity data received from pesticide registrants." They cited a January 2006 Inspector General report, "Opportunities to Improve Data Quality and Children's Health through the Food Quality Protection Act," that points out flaws in the EPA testing process that have yielded a less than "complete and reliable database on developmental neurotoxicity of pesticides ... upon which to base any final tolerance reassessment decisions as required by the FQPA." Among other issues, the EPA's required pesticide testing does not include sufficient evaluation of behavior, learning or memory in developing animals. (*Environmental Health Perspectives*, Volume 114, Number 10, October 2006)



Reducing organophosphate use in the United States by 55 percent between 1997 and 2007 (*see answer to Q. 1*) is no mean feat, and worthy of celebration. But the problem of pesticides and our health is more fundamental than presumed by those who, in good conscience, worked to pass the Food Quality Protection Act. Synthetic chemical pesticides were born from World War II chemical warfare technology. The current generation of synthetic pesticides is comparable in philosophy, if not precise chemistry. They are the only substances we manufacture that are widely available to consumers without a prescription, and that are deliberately designed to kill.

Regulating these complex molecular chains is a shell game. Work to solve one problem, and another one erupts. Neonicotinoids were widely touted as being safer for humans (especially the pesticide applicators) than competing products, but they turned out to be lethal to pollinators essential to the food chain. Triclosan was added to dozens of personal care and housekeeping products

to reduce transmission of disease; turns out there's no proof it's more effective than soap and water, and it is disrupting our body's hormone systems and promoting antibiotic resistant "superbugs."

Regulators, prey to the pressures of industry lobbyists and often indifferent leadership, will never move fast enough or bravely enough to protect the public and Earth's ecosystems from the next problem. We would be better off making peace with nature through organic cultivation than to continue the synthetic chemical warfare, adjusting the weaponry to reduce the collateral damage. As Rachel Carson wrote in *"Silent Spring"*:

"We still talk in terms of conquest. We still haven't become mature enough to think of ourselves as only a tiny part of a vast and incredible universe. Man's attitude toward nature is today critically important simply because we have now acquired a fateful power to alter and destroy nature. But man is a part of nature, and his war against nature is inevitably a war against himself ... Now, I truly believe, that we in this generation must come to terms with nature, and I think we're challenged as mankind has never been challenged before to prove our maturity and our mastery, not of nature, but of ourselves."

As must this generation as well.

17. You have no way of knowing whether and when your child's school is applying pesticides.

False. In 2002, thanks to the work of MOFGA and the Maine Toxics Action Coalition, the Board of Pesticides Control passed new regulations about pesticide use in Maine schools. The regulations require all Maine schools to use integrated pest management techniques when applying pesticides, including choosing the lowest risk products. It also provides for staff and parental notification of pesticide use. The school district can decide whether to give notification every time a pesticide is used, or to give annual notification with a pesticide registry system for parents who want notification of each application. Contact your school superintendent to find out how this regulation is being implemented in your school. For a copy of the regulations and more information, see http://www.maine.gov/dacf/php/integrated_pest_management/school/index.shtml

18. Your neighbors don't have to tell you when they're applying pesticides, and you have no way to stop them, even if the pesticides make you sick when they drift onto your property.

False. The Maine Board of Pesticides Control has two systems for requiring notification by near-by neighbors of outdoor pesticide applications: a self-initiated request for notification, which can be made regarding any application within 500 feet of your property (1,000 feet for aerial spraying), and a pesticide notification registry, which applies to non-agricultural applications within 250 feet. The latter requires a \$20 annual fee, which may be waived for financial hardship. Neither of these provisions requires any evidence of special medical condition or adverse effects from the pesticides. (See www.maine.gov/dacf/php/pesticides/public/notification.shtml#byrequest for details.)

MOFGA has long advocated for more effective notification regulations and has worked aggressively for the enactment of a more comprehensive notification system for aerial applications; this was, regrettably, repealed by the Maine Legislature in 2011. (<http://www.mofga.org/Programs/PublicPolicyInitiatives/PesticidesAction/CurrentPesticideLegislationInMaine/tabid/1505/Default.aspx>)

In addition to any legal rights you have regarding pesticides that drift onto your property and make you sick, including common law chemical trespass, negligence, and nuisance actions, the BPC has a regulation for designation of pesticide-free, or restricted, "Critical Pesticide Control Areas." These may be imposed when the board finds that use of pesticides "is likely to cause serious and/or longstanding impairment of the health of sensitive individuals or groups of individuals who normally occupy such areas." (Regulation 60-3; http://www.maine.gov/dacf/php/pesticides/public/critical_control_areas.shtml) Medical documentation is required, and the zone will not be established until after a public hearing and notification to all affected property owners. The rule has been used successfully only once to protect human health, in the case of a child with multiple chemical sensitivity. For more information contact the BPC at 287-2731.

19. Maine municipalities have no power to regulate pesticide use.

False. Municipalities have general "home rule" authority to regulate matters that affect the health and welfare of their residents. Maine is one of only seven states that permit local regulation of pesticide use. A Board of Pesticides Control document lists 20 municipalities that have imposed additional restrictions on pesticide use. The communities of Coplin Plantation, Lebanon, Limestone, New Sweden and Rangeley, for example, have prohibited aerial or powered pesticide applications generally, or in certain areas of the community. The "Right to Farm" statute (17 M.R.S.A. sec. 2805(4)), however, gives Maine's Commissioner of Agriculture, Conservation and Forestry the authority to review proposed ordinances that restrict pesticide use and to "advise the municipality" if the proposed ordinance would restrict or prohibit use of "best management practices." A farm operation "may not be considered a violation of a municipal ordinance if the method of operation constitutes a best management practice as determined by the Department of Agriculture, Food and Rural Resources in accordance with the Maine Administrative Procedures Act ..." The commissioner contended in 2003 that a proposed Addison ordinance banning aerial spraying was not enforceable as it would prevent blueberry "best management practices." This interpretation was disputed by MOFGA in testimony submitted at the public hearing on the proposed ordinance. The town ultimately decided not to enact the ban. For more details search news reports at www.mofga.org.

Municipalities considering ordinances that relate to pesticide storage, distribution or use should be aware of the [Maine statute 22 M.R.S.A. sec. 1471-U](#). This requires notice to the Board of Pesticides Control of any such proposed ordinances at least seven days before the meeting of the legislative body or the public hearing at which adoption of the ordinance will be considered, and requires additional notification to the board within 30 days after any such ordinance has been enacted. Failure to do this will result in voiding the statute and starting the enactment process all over again.

In November 2014, the citizens of the town of Ogunquit made history by enacting the first ordinance in Maine, and one of the few in the United States, which, with certain exemptions, prohibits the use of pesticides on lawns and landscapes, both public and privately owned. The ordinance does not apply to commercial agriculture, and allows pesticides approved for use by the National Organic Standards Board. Exemptions include wood preservatives, swimming pool products, pet supplies, and products for control of venomous insects and "noxious growths" such as poison ivy.

(<http://bangordailynews.com/2014/11/16/opinion/contributors/ogunquit-leads-the-way-with-ordinance-banning-pesticides/>, http://www.maine.gov/dacf/php/pesticides/documents2/municipal%20ordinances/Ogunquit_Ordinance_1-1-15.pdf)

In September 2016, the City of South Portland enacted an ordinance that restricts outdoor pesticide applications on public property (effective May 2017) and on private property (effective May 2018) to pesticides that are either approved for organic agriculture by the National Organic Standards Board, or classified as "minimum risk" pesticides by the EPA. The ordinance exempts commercial agriculture, various other pesticide uses, and allows for waivers for public health, safety and control of invasive species. (<http://www.southportland.org/departments/sustainability-office/pesticide-use/south-portlands-proposed-pesticide-use-ordinance/>)

To keep up with information about pesticides, please see the "Organic Matter" section of each issue of The Maine Organic Farmer & Gardener.

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