

Pesticides and You

News from Beyond Pesticides: Protecting Health and the Environment with Science, Policy & Action

Volume 32, Number 4

Winter 2012-13

A is for Apples, Alar, Antibiotics

...and A Call to end antibiotic use in apple and pear production, especially organic

Also in this issue:

**Update: Transforming
Government's Approach
to Regulating Pesticides**

**Organic Materials
Review**

**Pediatricians Issue
Warnings and
Recommendations on
Pesticides**



EPA Hands the Reins to Industry on Honey Bee Decline The organic solution faces a critical decision on antibiotics

EPA's handling of the honey bee crisis is outrageous and instructive. It tells us that the only way out of the pesticide-induced environmental and public health crisis is organic.

Honey Bee Debacle

I spent the day recently with commercial beekeepers, visiting USDA and Congressional offices to talk about the honey bee crisis. Their message: (i) unprecedented numbers of bee colonies are dying, leaving the ability to pollinate the nation's food crops uncertain, and (ii) EPA must restrict neonicotinoid pesticides—the insecticides used to treat seeds that are distributed systemically through the vascular system of plants, expressing themselves indiscriminately through pollen, nectar, and guttation drops and poisoning the bees, as they pollinate or forage. We petitioned EPA to suspend the chemical's use.

EPA, with USDA, hosted an all-day industry "Pesticide Summit." Three panels were assembled: (i) mitigating risks of chemical-laden dust coming off of automated vacuum seed planters, (ii) seed treatment and coatings, and (iii) best management practices and communication. The panels were led by Bayer, Syngenta, and Monsanto, respectively. Panelists were drawn from industry and an industry-supported group, with the exception of a USDA researcher, and a commercial beekeeper.

EPA Focuses on Dust Instead of Poisonous Plants

"Fugitive dust" contaminated with deadly pesticides from seed planters that stretch across 24 crop rows invades the landscape exposing bees. However, EPA and industry's focus on risk mitigation measures, such as new seed coatings and lubricants (also not tested for hazards to the environment) to reduce dust, does not eliminate the central systemic hazard posed by the chemicals. Talc or graphite are currently used in planters to keep the sticky treated seeds from getting stuck in the planter. The equipment industry does not use filters and collection devices to capture contaminated dust because it would create a disposal problem, it says. The effect of inoculating every corn, canola, and soybean plant with deadly chemicals that create fields of poisons throughout the nation is not, in EPA's view, a concern. The one field study EPA required under a "conditional" registration in 2003 came back as inadequate four years later after EPA allowed over 90% of corn seed in the U.S. to be treated. Some European countries have issued bans and the EU is considering a wider ban, because it relies on a more precautionary approach to the question in an effort to try to protect bees before the bee crisis worsens.

Organic Solution

EPA's approach reinforces the urgency for a national transition to organic. The takeaway for organic, as it grows beyond its current \$30 billion market share, is the need for rigorous science-based decision making that requires precaution on the allowance materials in the face of scientific uncertainty. The *Organic Foods Production Act* provides the framework for doing this with the independent stakeholder National Organic Standards Board (NOSB) of environmentalists,

farmers, consumers and public input providing oversight on allowable synthetic materials in organic and policies that govern organic systems. We must keep in mind the underlying standards of the organic rule, which require that practices "maintain or improve soil organic matter content in a manner that does not contribute to contamination of crops, soil, or water by plant nutrients, pathogenic organisms, heavy metals, or residues of prohibited substances."

Organic is not without its controversial materials. However, a sunset provision requires a reevaluation of allowed materials on a five-year cycle in order to consider new science or methods. An article in this issue addresses a petition now before the NOSB to extend the board-established 2014 phase-out of antibiotic use in organic apple and pear production. One of the hallmarks of organic is the prohibition of antibiotics in animal production. But their use in these orchard crops was allowed to control the bacterial disease fire blight. Many, if not most, northwest growers, who produce the majority of apples in the U.S. (except those who are producing for export to the EU, which prohibits antibiotic use) proclaim the need for antibiotics until alternative materials are developed.

Any extension beyond the current 2014 expiration date, which itself was an extension on an earlier expiration date, may be extended again. Or, as is happening more frequently, phase-outs or disallowance of materials are being blocked by the White House Office of Management and Budget. Given the science on bacterial resistance associated with broadcasting antibiotics in the environment, persistence in the orchard, and subtherapeutic low dose exposure through antibiotic residues in some fruit, and the related crisis in the availability of effective medical antibiotics when urgently needed, organic standards should not allow this use. For organic to grow with credibility, it must acknowledge the science and if some read it as uncertain, which most do not in this case, then organic must err on the side of caution.

The Path Forward

The summit started with an industry-supported panelist who said that organic is not the answer and environmentalists cannot talk to farmers. In fact, organic is the key to stopping the relentless poisoning and contamination of the bees and other beneficial organisms. And, farmers and environmentalists and consumers need to sit down together, as they do on the NOSB, to create a path forward and take the reins away from toxic chemical regulators who in tandem

with chemical companies have put us on a collision course with nature and the health of future generations.

This issue of *PAY* presents the opportunities and challenges that we face in key areas.

Jay Feldman is executive director of Beyond Pesticides.



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National Headquarters:

701 E Street, SE
Washington DC 20003
ph: 202-543-5450 fx: 202-543-4791
email: info@beyondpesticides.org
website: www.beyondpesticides.org

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BEYOND PESTICIDES STAFF

Jay Feldman, Executive Director
Nichelle Harriott, Staff Scientist
Stephanie Davio, Project Director/Forum Coordinator
Drew Toher, Public Education Associate
Xoco Shinbrot, Program Associate
Matt Wallach, IPM and Health Care Facility Project Director
Terry Shistar, PhD, Science Consultant
Matt Porter, Fellow

PESTICIDES AND YOU

Jay Feldman, Publisher, Editor
Stephanie Davio, **Jay Feldman**, **Nichelle Harriott**, **Matt Porter**, **Xoco Shinbrot**, **Terry Shistar**, **Drew Toher**, Contributors
Stephanie Davio, Layout

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Meeting the Cockroach Challenge

*Dear Beyond Pesticides,
I would love to know how to get rid of roaches without calling the Orkin guy. Please let me know; I will keep checking your website. Thank you so much!*

-Tania

Hi Tania,

Thank you for reaching out to Beyond Pesticides. Dealing with cockroaches can be quite unnerving, but fortunately there are do-it-yourself practices you can perform that will help bring your roach problem under control without the use of toxic insecticides.

It should be noted that eliminating a roach infestation (if you see roaches during the day, consider yourself infested) is not always easy, especially in apartment buildings. As anyone who has successfully dealt with their roach problem will tell you, it takes a concerted effort to keep out these insects. Roaches are hardy creatures. Common household roaches can go weeks without a meal, survive after being submerged in water for 40 minutes, and squeeze into cracks thinner than the width of a dime. But leave the synthetic pesticides on that smelly isle at the hardware store. Studies show that cockroaches have developed resistance to entire classes of pesticides in many parts of the U.S.

Although different species of roaches have different habitat preferences, when looking for the source(s) of your infestation consider these factors: access to food, water, and dark shelter, and proximity to warmth and moisture. Roaches prefer to squeeze into tight-fitting spaces, and especially like to hide in wood cabinets, furniture, and the grooves in cardboard – use a flashlight to check for intrusions (groups of cockroaches) around small nooks and crannies where you see signs (such as egg casings, dead roaches/

roach parts). Cockroaches can live no longer than one week without water and prefer carbohydrates to protein and fat. However when hard-pressed, roaches will eat just about anything, from wallpaper paste to sponges and bar soaps.

Cockroaches can be controlled by excluding them from access to the factors listed above. Structural controls are a critical part of a successful strategy. This includes caulking, weather-stripping, or repairing any openings, no matter how small, around pipes, baseboards, electrical fixtures, outlets and switches, doors and windows. Screening windows, vents, and floor drains (make sure the screen's holes won't allow roaches to pass through) prevents roaches from migrating throughout your living space. These practices isolate and contain the roaches to where they currently are.

Cultural practices, such as storing food in tightly sealed containers and purchasing a trash can with a tight fitting lid (avoid placing it underneath the sink), are

Express Yourself

Beyond Pesticides welcomes your questions, comments or concerns. Have something you'd like to share or ask us? We'd like to know! If we think something might be particularly useful for others, we will print your comments in this section. Mail will be edited for length and clarity, and we will not publish your contact information.

There are many ways you can contact us: Send us an email at info@beyondpesticides.org; give us a call at 202-543-5450, or simply send questions and comments to: 701 E Street SE, Washington, DC 20003.

extremely helpful. Any leaky faucets or drains should be repaired, and any moisture producing pipes should be insulated. Additional cultural controls such as attentive vacuuming, not leaving food or crumbs out at night, immediately cleaning up messes, and refraining from



These images are all part of a sound IPM strategy to prevent and eliminate cockroaches. Clockwise from top left: caulk gaps and holes to keep pests out; install weather-stripping to eliminate entry points; repair leaky pipes and other water sources, and; keep food in sealed containers.

allowing dishes to soak overnight are also certain to limit cockroach access to food and water.

You can monitor cockroach populations by placing sticky traps where roaches would be traveling (behind appliances, inside cupboards, where floor meets wall or countertop, under the sink). Leaving them in place for at least 24 hours provides a general idea of their population size.

Least-toxic control methods can be used to eliminate roaches after they have been isolated and excluded from food and water. Boric acid bait, now widely available, is an effective tool that does not off-gas into the indoor air because it is non-volatile. Dust formulations, which should be applied with a mask to prevent exposure, are only to be used behind stoves and other appliances or in wall voids that cannot be reached by children and pets. When roaches walk over boric acid, it adheres to their body, and when grooming themselves the roach will ingest the substance, which acts as a stomach poison, generally killing the insect within a few days. Diatomaceous earth (DE) can also be used to control roaches. It works as an abrasive and dries out the cockroach. However, be sure to purchase food grade DE without added pesticides, and use caution as the substance can irritate the respiratory system. Both boric acid and diatomaceous earth can be placed where caulking is not practical, around cracks and crevices, behind counters, and in baseboards. Both substances are effective indefinitely if kept dry.

Thank you for contacting Beyond Pesticides. Battling roaches is a tough undertaking, but it is possible with determined effort! These steps are worth the effort to protect you and your family from toxic chemical exposure in your home. Additional information on cockroach control can be found in Beyond Pesticides' factsheet, bit.ly/RoachControl, or by emailing Beyond Pesticides at info@beyondpesticides.org.

From the Web

Beyond Pesticides' Daily News Blog features a post each weekday on the health and environmental hazards of pesticides, pesticide regulation and policy, pesticide alternatives and cutting-edge science, www.beyondpesticides.org/dailynewsblog. Want to get in on the conversation? Become a "fan" by "liking" us on Facebook! www.facebook.com/beyondpesticides.

EPA Poised to Repeat Missteps, Registers Pesticide Toxic to Bees

Excerpt from Beyond Pesticides original blog post (02/6/2013) The U.S. Environmental Protection Agency (EPA) has proposed to register a new insecticide, sulfoxaflo, which the agency has classified as "very highly toxic" to honey bees.

Kathy W. Comments:

"Please stop killing our pollinators. I am against the insecticide Sulfoxaflo. I am a current beekeeper. My reason is to try to help to improve our children's future for our world's honey bee population, which has so drastically declined from insecticides."

A. Ariki Comments:

"When for many years now we have problems with low numbers of bees and still new insecticides are brought in that reduces this number, how hard can it be to decide against allowing this pesticide into the country? If not for the sake of the bees then for the sake of humankind! We need bees so we can live! It's as simple as that. Come on!"

National Organic Program Delays Compliance with Organic Law

Excerpt from Beyond Pesticides original blog post (12/11/12): The USDA's National Organic Program (NOP) is proposing to delay compliance with National Organic Standard Board (NOSB) recommendations to disallow non-essential synthetic vitamins, minerals, and accessory nutrients in products certified as organic.

Jean T. comments:

"I am 70 years old and want my organic food to be organic and don't see why I should have to wait two years to be sure the USDA's NOP [National Organic Program] is doing its job."

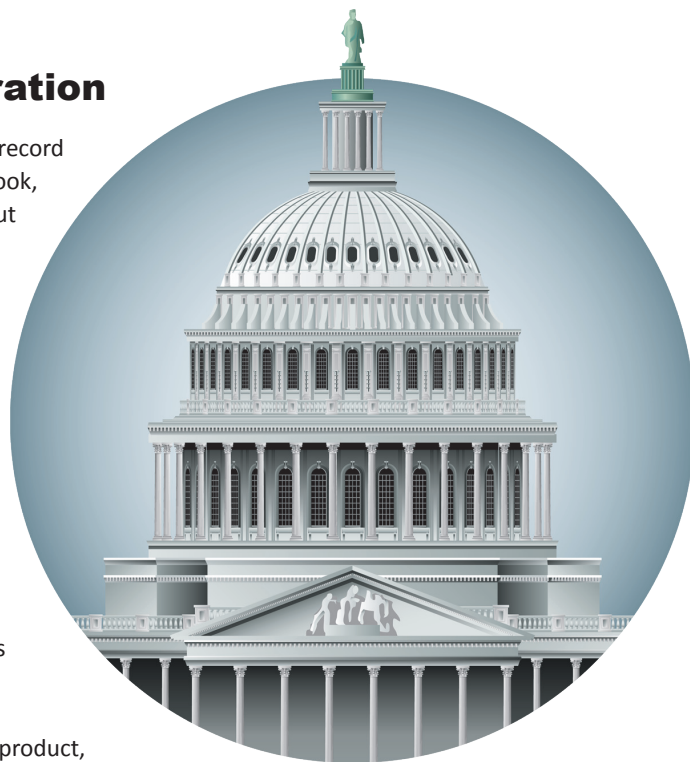
EPA Sued Over Nano Pesticide Registration

The U.S. Environmental Protection Agency (EPA) faced tough questioning from the U.S. Court of Appeals for the Ninth Circuit on January 16 over its decision to conditionally approve a pesticide product containing nanosilver as the active ingredient. In arguments over whether EPA lawfully granted conditional registration of HeiQ AGS-20, the Natural Resource Defense Council (NRDC) challenged the agency's risk assessment for infants and children. NRDC says that the agency erred by assuming that 3-year-olds would be the most vulnerable consumers in its risk assessment, when infants are more likely than any other subgroup to chew on fabrics that could contain this pesticide.

Up for debate is whether 3-year-olds chew more aggressively than infants and produce more saliva, an important factor for oral exposure. Though EPA stated it has a long-standing practice of treating 3-year-olds as the most vulnerable consumer to textiles, Judge Jay Bybee told EPA not to spend time arguing if NRDC has standing to bring its claim. According to the judge,

"We've got affidavits in the record from parents who said, 'Look, we're very concerned about this.'" The judge also questioned EPA about the labels on products containing nanosilver, and expressed his concern that these labels may be misleading. He stated, "It's going to be called 'super coating that makes you not stinky.' And that's very different from saying, 'This contains nanosilver that you don't want to let your infants chew on.'"

The antimicrobial pesticide product, HeiQ AGS-20, contains nanosilver and has been applied to textiles such as clothes, blankets, and pillowcases, in an attempt to suppress odor and bacterial growth. Due to their small size, nanoparticles are able to invade bacteria and other microorganisms and kill them. Just as the size and chemical characteristics of manufactured



nanoparticles can give them unique properties, these same properties –tiny size, vastly increased surface area to volume ratio, high reactivity– can also create unique and unpredictable human health and environmental hazards.

Methyl Iodide Use Formally Cancelled as of the New Year

The U.S. Environmental Protection Agency (EPA) and Arysta LifeScience North America, LLC, the sole registrant of methyl iodide, have entered into a Memorandum of Agreement to formally terminate all agricultural use of the toxic fumigant in the U.S. as of December 31, 2012, and ultimately remove all methyl iodide products from the U.S. market. As of January 1, 2013, Arysta may no longer produce methyl iodide for use in the U.S. Further distribution and sale of methyl iodide end-use products will be prohibited, and users and distributors are expected to return the products to Arysta (the company will take back existing stocks) for proper disposal or export. The technical product registration will be cancelled effective December 1, 2015. After that date, all sale and distribution of the technical product to formulators will also be prohibited, however stocks are permitted to be exported until supplies are exhausted.

In March 2010, Earthjustice and other organizations petitioned EPA, urging the agency to exercise its authority under Section 6 of the *Federal Insecticide Fungicide and Rodenticide Act* (FIFRA) to suspend and cancel all registrations for the pesticide methyl iodide, citing unreasonable adverse effects on the environment. Several environmental groups also sued the State of California in an attempt to reverse the state's approval of the chemical. Methyl iodide, or iodomethane, has been registered since 2007 when EPA approved a time-limited, one-year conditional registration of methyl iodide, despite serious concerns raised by a group of over 50 eminent scientists, including six Nobel Laureates in Chemistry. These scientists sent a letter of concern to EPA, saying, "Because of methyl iodide's high volatility and water solubility, broad use of this chemical in agriculture will guarantee substantial releases to air, surface waters and groundwater, and will result in exposures for many people." It was registered for use as a pre-plant soil fumigant and was developed as an alternative to the fumigant methyl bromide, a notorious ozone depletor. While methyl iodide's impact on the ozone layer is unquestionably far less than that of methyl bromide, its toxicity to farmworkers is now known to be significantly greater than assumed by EPA at the time of registration, as is its potential to contaminate sources of drinking water.

FDA Allows the Continued Use of Lindane Despite Health Risks

The Food and Drug Administration (FDA) has denied a 2010 petition filed by the National Resources Defense Council (NRDC) and Pesticide Action Network North America (PAN) to ban the insecticide lindane, an active ingredient in many lice shampoos and lotions that is harmful to human health and ineffective in controlling lice and scabies. Pressure had been mounting on FDA as Congressman Edward J. Markey (D-Mass.), a senior member of the Energy and Commerce Committee, asked the agency to stop the pharmaceutical use of lindane this past summer. Lindane was formerly used in agricultural insecticides until it was banned by the U.S. Environmental Protection Agency (EPA) for use on crops in 2006. FDA regulates pharmaceuticals that contain insecticides and pesticides, such as the toxic antimicrobial pesticide triclosan, that are in cosmetics.

The dangers of lindane are well documented. Lindane is an organochlorine class pesticide, similar in structure to DDT, and a known neurotoxicant and endocrine disruptor. In addition to being a carcinogen, perhaps the most startling health effect associated with the use of lindane is seizures in young children and adults at doses of 1.6 and 45 grams, respectively. Lindane has been classified by EPA as a class B2/C probable/possible human carcinogen, based on liver and lung tumors in mice. The chemical has been linked to reproductive problems in mice, such as adverse fetal development and body weight, and is also slightly estrogenic to female rodents, and causes the testes of male rats to become atrophied. Lindane is moderately toxic to bird species and pollinators, and is highly persistent in most soils. The chemical moves quickly through soils and water, posing a significant risk of groundwater contamination. In 2009, lindane was added to the list of Persistent Organic Pollutants (POPs). In addition to the human and environmental health risks that lindane presents, it is also ineffective at controlling lice and scabies. Over time, lice and scabies have become resistant to lindane. Studies have found that lindane-based shampoo was the least effective of all head lice shampoo treatments, and that lindane-based products are “not sufficiently effective to justify their use.”



Nit Combs -like the one pictured above- are a much more effective and safe way to control lice than harmful shampoos containing toxic ingredients such as lindane.

USDA Report on Genetically Engineered Food Misguided

The National Organic Coalition (NOC) sharply condemned recommendations contained in the final report of the Advisory Committee on Biotechnology and 21st Century Agriculture (AC21), a group appointed by the U.S. Department of Agriculture (USDA) to address transgenic contamination of organic and non-genetically engineered (GE) crops.

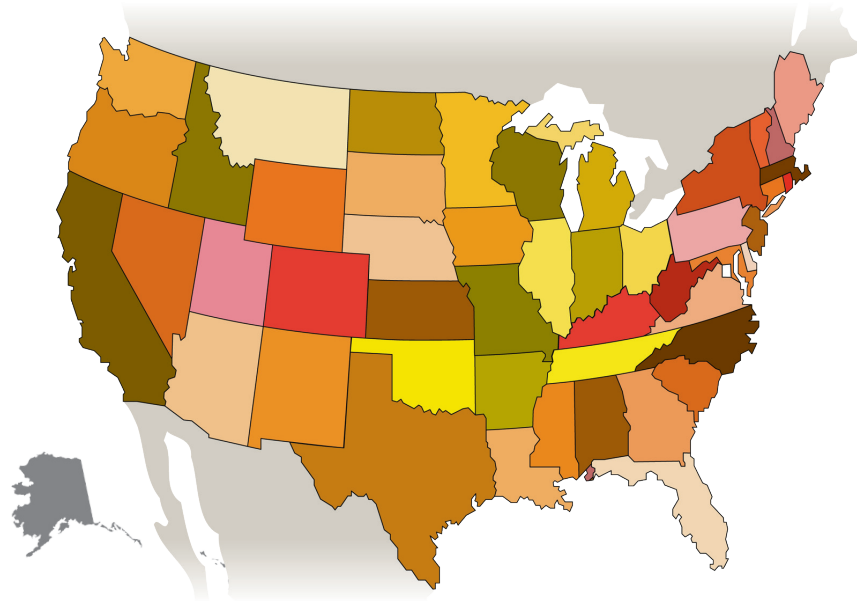
Of particular concern in the report is the recommendation that organic and non-GE conventional farmers pay for crop insurance or self-insure themselves against unwanted GE contamination. NOC strongly asserts that this proposal allows USDA and the agricultural biotechnology industry to abdicate responsibility for preventing GE contamination, while making the victim

of GE pollution pay for damages resulting from transgenic contamination.

In August 2011, USDA convened AC21 and charged it with identifying compensation mechanisms to address GE contamination. The underlying assumption of USDA's work plan for the committee was that as long as farmers are adequately compensated, GE contamination is a permissible and acceptable cost of doing business for organic and non-GE farmers. NOC has rejected this assumption, as did several members of the AC21 and Beyond Pesticides. The committee's final report failed to make a single recommendation holding the patent holders of genetic engineering technologies responsible and liable for damages caused by its use.

According to NOC, an additional shortcoming of the report is the recommendation that GE and non-GE farmer neighbors develop “co-existence agreements” as a means of moderating relationships in light of inevitable contamination.

However, “co-existence” indicates some form of equality or a level playing in the situation. This is not the case. It is clear that organic and non-GE farmers are the clear losers under these conditions, as GE contamination precludes them from growing the crops of their choice. Moreover, the recommendation ignores the real-life issues farmers face, including absentee landowners, unwilling or uninformed neighbors, and the power and money backing biotech growers.



Atrazine Settlement Checks Distributed

Checks are now being sent to 1,085 community water systems across the U.S. in the final phase of a \$105 million settlement with Syngenta, the largest manufacturer of the toxic weed killer atrazine. The class action settlement, *City of Greenville v. Syngenta Crop Protection, Inc.*, in U.S. District Court for the Southern District of Illinois, Case No.: 3:10-cv-00188-JPG-PMF, stems from a lawsuit spanning eight years and is meant to help reimburse communities for past expenses associated with atrazine removal. "Science has been fighting an uphill battle against giant pesticide manufacturers like Syngenta who claim that a little weed killer in your drinking water won't hurt you. Independent scientists now believe that even trace amounts can harm you and your children for generations to come," the lead plaintiff's lawyer Stephen M. Tillery said.

The settlement formula allocates the proceeds among claimants by first awarding each a payment of \$5,000, which is equal to the approximate cost of 20 water tests. Each claimant is then allocated a percentage of the remaining fund based on evidence of: (1) the levels of atrazine in its water; (2) how often atrazine has been found in its water; (3) how long ago atrazine was found in its water; and (4) the claimant's size. Generally, if a system processed more water or frequently had high concentrations of atrazine, it is eligible for more money. Plaintiffs who are a part of the class will not be able to sue, or be part of any other lawsuit regarding the presence of atrazine in their drinking water or water sources for the next 10 years. In approving the settlement in October, U.S. District Judge Gilbert noted that, "The amount represents approximately 76% of the \$139 million estimated by Plaintiffs' expert to be the class's maximum potential recovery for past damages. This is a substantial recovery in any litigation and is far greater than the percentages found adequate by numerous other courts."

EU Recommends Suspension of Neonics

In January, the European Food Safety Authority (EFSA) presented its report, finding that the neonicotinoid class of insecticides poses unacceptable hazards to bees. According to Jay Feldman, Executive Director of Beyond Pesticides, "The EFSA report confirms what we have been asking EPA to recognize. Clothianidin and other neonicotinoids are highly toxic to bees, and should be banned by EPA and removed from the environment." In its investigation, EFSA, which was tasked with assessing the risks associated with these chemicals to bee colony survival and development, found that systemic contamination of neonicotinoid-treated crops and contamination via dust place honey bees and their hives at high risk. Exposure to contaminated seed dust poses a high risk to honey bees for all three neonicotinoids used on corn and possibly other crops, such as soybeans and canola, as well as exposure to residues in nectar and pollen. High risks were also identified from exposure to guttation fluid from corn for thiamethoxam. Considering recent research indicating that 9.5% of the total economic value of agricultural production for human consumption comes from insect-pollinated crops globally, the EFSA's conclusion on neonicotinoids marks an important turning point in the pesticide dialogue.

In early February and in light of EFSA's findings, the EU Commission urged member states to suspend neonicotinoid treatment on crops that are considered attractive to bees, particularly sunflowers, rapeseed, corn, cotton, and cereal crops. "It's a great thing," said New York beekeeper Jim Doan, "I'm hoping that the EPA follows in their footsteps. While I recognize our government works differently, it says something that the European government has recognized the overwhelming data on the impact of these pesticides." In the U.S., Beekeepers and environmental groups including the Center for Food Safety, Beyond Pesticides, and the Pesticide Action Network North America, filed an emergency legal petition in 2012 with the EPA seeking an immediate halt to the use of clothianidin until adequate studies have been completed and safeguards put in place. The agency denied the petition and is considering other, less immediate action related to its reregistration review, which is slated to be finalized by 2018.

Lower Asthma Rates in Boston Attributed to IPM in Public Housing

Boston health officials say new city data indicates that asthma incidences have dropped nearly in half since 2005 due to the implementation of an integrated pest management (IPM) program in low-income housing. The program, run jointly by Boston Housing Authority (BHA) and Boston Public Health Commission, has successfully reduced the number of roaches and rodents while reducing the use of pesticides, which, along with roach and rodent droppings, can aggravate asthma symptoms. The data show that adults who reported having asthma symptoms dropped from 23.6 percent in 2006 to 13 percent in 2010, the latest year available. At the same time, asthma rates in other low-income housing in Boston, not run by BHA, remained relatively unchanged. In the late 1990s and early 2000s, health authorities found extremely high infestations of roaches and rodents in BHA buildings, and equally concerning, housing leaders were seeing desperate residents resorting to the use of powerful, toxic pesticides to try to rid their apartments of the pests. In 2005, housing authority and health officials launched a new IPM approach to dealing with vermin.

Instead of having BHA contractors come in to apply pesticides after a problem was discovered, the new program utilized a three-pronged IPM approach - promptly removing trash, and fixing and preventing leaks, which create friendly places for pests to live. Residents were also instructed to remove clutter and trash from their homes and to promptly notify management of leaks, holes, or pests found in their apartments. New residents also received a brochure and viewed a video about IPM methods that they can practice in their homes. Similarly, contractors were required to aggressively pinpoint problem areas that need fixing. Boston Public Health Commission says there have been fewer pest complaints and housing code violations since the program was launched.

Toxic Contamination Remains Widespread in the Chesapeake Bay

A new federal report finds toxic contamination remains widespread in the Chesapeake Bay, noting that nearly three-fourths of the Bay's tidal waters are "fully or partially impaired" by toxic chemicals, with people warned to limit fish consumption from certain areas. Contamination is severe in a handful of "hot spots" around the Bay, including Baltimore's harbor, largely a legacy of past industrial and shipping activity. The report also notes there are other widely dispersed contaminants found around the Bay that pose disputed or unknown threats to wildlife and people, such as the agricultural herbicide atrazine, pharmaceuticals, and personal care products, like triclosan and triclocarban.

As a result of this widespread contamination, compromised fish health has been observed within populations in the Chesapeake Bay watershed, including an increased incidence of infectious disease and parasite infestations contributing to: increased mortality in several species of fish; feminization (intersex, plasma vitellogenin) of largemouth and smallmouth bass and other signs of endocrine disruption; reduced reproductive success and recruitment of yellow perch in tributaries

in certain highly urbanized drainage basins; and tumors in bottom-dwelling fish. Similarly, organochlorine pesticides have been found in eggs of predatory birds at concentrations associated with embryo lethality. "Since 2000, new concerns, such as intersex conditions in fish, have arisen," the report says. "Although the causes are undetermined, there is increasing evidence that contaminant exposures may play a role." New reduction goals are being considered.

Health and environmental advocates say that this report lends support for legislative action in Maryland on pesticides and other hazardous chemicals. "Our current lack of information about pesticide usage results in dangerous data gaps," said Robert Lawrence, director of the Johns Hopkins Center for a Livable Future. "Environmental scientists and public health professionals need to know what, when and where pesticides are being used in order to identify which pesticides have adverse impacts on fish, wildlife, the ecosystem, and the health of the public." While the report does not address potential effects on human health except in recognizing fish impairments, it identifies research

and monitoring that could be conducted to better define the extent and severity of groups of contaminants. It also focuses on the severity of adverse effects of toxic contaminants on natural resources in the Bay and its watershed. Legislation in the Maryland legislature, H.B.775 and S.B.675, would set up a pesticide use tracking system for farm and commercial pesticide use.



Image of the Chesapeake Bay, by NASA/Goddard Space Flight Center Scientific Visualization Studio

State of Minnesota Bans Triclosan Products from State Offices

On the heels of a new study identifying the antibacterial chemical triclosan and several of its toxic derivatives in sediment samples taken from freshwater lakes, the state of Minnesota will no longer purchase products containing triclosan. Friends of the Mississippi River successfully pushed for the ban.

Research published in the journal *Environmental Science and Technology* reveals the chemical to be present in increasing concentrations since it was first invented in the 1960s. The results of this study put increased pressure on lawmakers and cosmetic companies to remove this chemical from consumer products. Beyond Pesticides and other groups, which have petitioned the U.S. Food and Drug Administration (FDA) and the U.S. Environmental Protection Agency (EPA) to remove triclosan from a vast array of consumer products, continues to urge cosmetic companies to take action on

the chemical in the face of inadequate regulation.

Scientists tested eight sediment samples from freshwater lakes across Minnesota, including Lake Superior. Bill Arnold, Ph.D., co-author of the study and professor at University of Minnesota notes, "We found that in all the lakes there's triclosan in the sediment, and in general, the concentration increased from when triclosan was invented in 1964 to present day. And we also found there are seven other compounds that are derivatives or degradation products of triclosan that are also in the sediment and also increasing in concentration with time." Some of the breakdown products that scientists discovered are polychlorodibenzo-p-dioxins (PCDDs), a group of chemicals known to be toxic to both humans and wildlife. All of the lakes tested are end routes for wastewater treatment plants. Researchers explain that

triclosan undergoes a chemical reaction in treatment plants during the last stage of the purification process, when chlorine is mixed with wastewater.

In the words of Dr. Arnold, co-author of the recent study, "I think this is a case where consumers can certainly put pressure on the market. So if consumers look at their products and don't buy things with triclosan, they're making their voice heard. Or they can also talk to the retailers and the manufacturers and tell them they don't want this product if that's the choice they make, if they don't like the fact that it's going beyond their sink and into the environment." Some manufacturers have voluntarily removed triclosan from their products in the absence of federal regulations and in response to consumer outrage, including Johnson and Johnson and Colgate-Palmolive (although the company is retaining use of triclosan in its Colgate Total brand toothpaste).

Fungus Shows Promise for Bedbug Control

New research from Penn State finds that natural fungus, *Beauveria bassiana*, may effectively control bedbugs. The study, "A preliminary evaluation of the potential of *Beauveria bassiana* for bed bug control," finds that bedbugs exposed to the biopesticide becomes infected and dies within five days, with no differences in insect's susceptibility to the fungus due to feeding status, sex, strain, or life stage. Most importantly, the infected bedbugs carry the biopesticide back to their hiding places, infecting those that did not go out in search of blood. Nina Jenkins, senior research associate in entomology explained that the fungal spores were transferred from the exposed bug to their unexposed companions, with almost 100% infection, "So they don't even need to be directly exposed, and that's something chemicals cannot do." This result is important because bedbugs live in hard-to-reach places. "Bedbugs tend to be cryptic, and they'll hide in the tiniest crevices," said Ms. Jenkins. "They don't just live in your bed. They hide behind light switches and power sockets and in between the cracks of the baseboard and underneath your carpet."

The researchers used an airbrush sprayer to apply spore formulations to paper and a cotton jersey, a common bed sheet material, while a control surface of paper and cotton jersey were sprayed with blank oil only. The surfaces were allowed to dry at room temperature overnight. Three groups of 10 bedbugs were then exposed to one of the two surfaces for one hour. Afterward, they were placed on clean filter paper in a petri dish and monitored. "They are natural diseases that exist in the environment," Ms. Jenkins said. "They are relatively easy to produce in a lab and stable, so you can use them much like chemical pesticides." It's important to note that while biopesticides are traditionally classified as a least-toxic method for pest management, products that are designed to kill living organisms should always be treated with caution. In order to successfully deal with any structural pest infestation, one must embrace a defined integrated pest management (IPM) approach of prevention, monitoring and control, using least-toxic pesticide products, including biological controls, only as a last resort. Methods such as vacuuming, steaming, and exposing the insects to high heat can control an infestation without dangerous or unwanted side effects. This approach, as well as taking steps such as sealing cracks and crevices, reducing clutter and encasing mattresses, can also help to prevent an infestation in the first place.



A bed bug with *Beauveria bassiana* sporulating on its cadaver. Photo Courtesy Nina Jenkins, Penn State News.



Update: Transforming Government's
Approach to Regulating Pesticides

What a Second Obama Term Can Do to Stop the Toxic Treadmill

By Nichelle Harriott and Jay Feldman

With the first inauguration of President Obama in 2009 and a new optimism for transforming pesticide regulation in the U.S., Beyond Pesticides laid out several recommendations in the spring of 2009, urging the new Obama administration to address several high priority issues we identified. With the dawn of a second Obama term, we reflect on the last four years of advances and challenges in pesticide regulation, and recommend again key priorities that should reflect their resonance with the priorities of the second Obama Administration in "protecting the air we breathe, water we drink, and land that supports and sustains us."

The 2009 document, *Transforming Government's Approach to Regulating Pesticides: To Protect Public Health and the Environment* (available on the Beyond Pesticides' website at <http://bit.ly/VZJXky>), focused on pending regulatory actions and petitions before the government, either because of ongoing chemical reviews, rulemaking, or petitions. While we incorporate big picture thinking, we were, and are still focused on specific actions that the relevant agencies could take immediately. Those recommendations were submitted to the White House in 2009. The issues covered in the document included, but were not limited to: promoting organ-

ic agriculture; protecting sensitive species; regulating endocrine disruptors; protecting farmworkers and their families; disclosing inert ingredients; banning persistent, bioaccumulative pesticides; and, protection from low-dose exposure. Now we urge the administration to redouble its effort on these issues with renewed vigor, and affirm its commitment to a healthy American public and environment.

Success

During the first term, Beyond Pesticides' executive director was appointed to a 5-year appointment to the National Organic Standards Board (NOSB) as a representative of the environmental stakeholder group. The Board seat has offered the important opportunity to advance organic standards in alignment with the *Organic Foods Production Act*, which Beyond Pesticides helped to draft in the late 1980's. Beyond Pesticides has used its expertise to evaluate materials reviewed by the NOSB for inclusion on the National List of Allowed and Prohibited Substances and advance policies that strengthen attention to preventing adverse health and environmental effects, protecting biodiversity, determining essentiality of materials, and respecting consumer expectations. Beyond Pesticides has launched other collaborative projects with the administration to eliminate dependency on toxic pesticides. The work with the NOSB establishes a framework for the admin-

istration to further institutionalize alternatives to toxic pesticide dependency by strengthening organic system standards, building public trust in the organic label, and assuring transparency and solid science in the Board's regulatory deliberations. The goal is to move an organic systems approach into the mainstream as the use of toxic pesticides becomes increasingly unacceptable in all venues, from agriculture, playing fields, parks, schools, to homes and gardens.

Since 2009, we have celebrated important victories, such as the cancellation and phase out of highly toxic pesticides like azinphos-methyl (AZM), endosulfan, methidathion, methamidophos, methyl parathion, sulfuryl fluoride, and methyl iodide. Limitations were also placed on certain organophosphate pesticides: chlorpyrifos, diazinon, and malathion, to protect endangered and threatened salmon and steelhead in California, Idaho, Oregon and Washington. Also, several rodenticide products, proven to be toxic to children and wildlife, were identified for cancellation by the U.S. Environmental Protection Agency (EPA) with remaining products to be available only in secured bait stations, ensuring that the poisoning of children would be reduced. There were also partial victories that saw the restriction of certain pesticide uses, even though EPA did not go far enough to protect vulnerable populations. For instance, the highly toxic chlorpyrifos was given new agricultural risk mitigation measures to reduce exposure of bystanders to spray applications by restricting aerial application rates and establishing mandatory buffers around sensitive sites where bystanders, including children, are known to suffer exposure. However, the new restrictions continued to ignore the unique risks to farmworker health and that of their families.

In 2011, EPA moved quickly to issue a "Stop Sale, Use, or Removal" Order, under Section 13 of the *Federal Insecticide, Fungicide and Rodenticide Act* (FIFRA) for the new herbicide Imprelis, which caused hundreds of acres in damage to spruce and pine trees across the country. Imprelis (aminocyclopyrachlor) was conditionally registered without pertinent data on its ecological effects on non-target plants. EPA broke through the bureaucratic inertia that has historically plagued the agency to remove this pesticide that was killing trees by deeming the pesticide misbranded because it was causing adverse effects that were not controlled. Even though this case draws parallel to the conditional registration of the bee-killing clothianidin, where the product was put on the market before all

relevant supporting data was submitted and is considered "misbranded" because of adverse ecological effects associated with its use, EPA, in the face of millions of dollars of damage to non-target trees, was forced to quickly order the removal of Imprelis from the market. EPA also made some strides forward in increasing transparency and improving chemical oversight. In 2009, the agency invited public comment on options for disclosing "inert ingredients" in pesticides. Unfortunately, this action has been on hold. EPA also proposed new labeling guidelines for pesticide drift to provide clearer, more consistent and enforceable label directions. However, a path forward on these guidelines has not yet been reached.

Continuing Challenges

Under the Obama Administration there was also an alarmingly increase in deregulatory actions allowing the proliferation of genetically engineered (GE) crops into the environment. Industry giants like Monsanto and Syngenta were granted numerous petitions to the U.S. Department of Agriculture (USDA) to deregulate various GE crops, such as corn, soybeans and alfalfa, that are tolerant to various herbicides, including 2,4-D, glyphosate (Round-up) and those that incorporate the insecticide *Bacillus thuringiensis* (Bt). Organic and non-GMO farmers still face dangers and threats of legal action associated with genetic drift, an issue ignored by both industry and USDA. EPA's response to colony collapse disorder (CCD) has been disappointing, given the strong evidence that links the disappearance of the bees to the expanding uses of neonicotinoid pesticides.

Congressional Pushback

In the 112th Congress, there were a staggering 125 pieces of legislation or more that sought to reduce environmental protection, including 50 bills targeted at EPA, 16 to dismantle the *Clean Water Act*, 31 against actions that can prevent pollution, and 22 to defund or repeal clean energy initiatives. This includes H.R. 872, a bill that was introduced to strip the *Clean Water Act* of its authority over pesticide discharges into U.S. waterways. The language of this bill has also been included into other pieces of legislation but thanks to the diligence of concerned members of Congress and environmental groups and their members, those bills did not advance in Congress. H.R. 872 and other similar bills were introduced in response to the new National Pesticide Discharge and Elimination System (NPDES) permits for pesticide use, which went into effect in 2011. New regulations now require pesticide applicators to have permits to discharge pesticides in or near U.S. waterways regulated under the *Clean Water Act*. Industry and agribusiness groups took to the Hill to undermine EPA's statutory responsibility to institute the permits, as did states that view the



Summary of Key Priorities for the Obama Administration, Accomplishments and Challenges

Key Priorities, 2009	Federal Action Since 2009	Action Still Needed
Promote organic agriculture and systems to slow global climate change.	Organic garden created at White House. (2009) Beyond Pesticides' executive director appointed to National Organic Standards Board (NOSB). (2009)	Farm Bill that supports organic agriculture and directs USDA to shift focus from chemical-intensive agriculture to one that promotes alternatives that reduce environmental contamination and fight climate change. Place moratorium on new GE crops. Protect and build organic integrity.
More aggressive action against harmful pesticides.	EPA issues a "Stop Sale, Use, or Removal" Order for the herbicide Imprelis by utilizing an authority that has not been frequently used to regulate the product as "misbranded" under the <i>Federal Insecticide, Fungicide, and Rodenticide Act</i> (FIFRA). (2011)	Broader application of the "misbranded" finding to chemicals such as neonicotinoids, which are killing bees.
Protect sensitive species with immediate protections for honey bees and other pollinators.	Pollinator issue elevated at federal and state level with several task forces created (2010). Scientific Advisory Panel review of pollinator risk assessment framework. (2012)	Ban insecticides clothianidin and thiamethoxam.
Protect water from pesticide contamination by ensuring consistency with <i>Clean Water Act</i> .	National Pollution Discharge Elimination System (NPDES) permit instituted to monitor pesticide discharges. (2011)	Identify legislation that weakens the <i>Clean Water Act</i> . Urge EPA to enact stricter water standards for pesticides and their metabolites.
Protect farmworkers and farmworker children.	Cancellation and phase out of endosulfan (2010) and azinphos-methyl (AZM). (2012)	Adopt stronger worker protection standards. EPA must also revoke the registrations of pesticides found to be responsible for acute and chronic poisoning of farmworkers, including chlorpyrifos, ethoprop and diazinon.
Protect children from dangerous pharmaceutical pesticide products.	FDA dismisses lindane suit, refuses to remove lindane from lice shampoos. (2012)	FDA and EPA must ban lindane and work to strengthen coordination on the regulation of pharmaceutical products containing pesticides.
Incorporate pesticide drift into assessment of pesticide exposure.	EPA considers proposing draft guidelines to clarify pesticide drift label language. (2011)	EPA must improve definition of drift and harm caused by drift, and improve enforcement capabilities for ensuring compliance with pesticide labels.
Prevent testing of pesticides on people.	EPA issues new rules on human testing to include more checks and balances that serve as disincentive for companies to test on human subjects. (2011)	EPA must ensure prohibition of industry-sponsored human testing, as well as the exploration of government-sponsored human testing.
Ensure fumigant pesticide regulations maintain protections for public health.	EPA issues new safety measures to increase protections for agricultural workers and bystanders. (2009) New use restrictions on aluminum and magnesium phosphide, including prohibition of all uses around residential areas. (2010) Methyl iodide withdrawn from U.S. market. (2012)	Address current data gaps and transition from the use of fumigants to safer alternatives.
Disclose "secret ingredients" in pesticide products.	EPA initiates rulemaking to disclose all ingredients on pesticide labels. (2010)	Finalize a new rule requiring pesticide labels to identify hazardous inert ingredients classified by federal statutes.
Ban the non-medical uses of the hazardous antibacterial triclosan.	EPA publishes for comment Beyond Pesticides' petition to ban triclosan (2010). Manufacturers quietly reformulate products to remove triclosan.	EPA and FDA must make a finding that the triclosan poses unreasonable risks to human and environmental health and ban the chemical from consumer products.
Establish moratorium on pesticidal nanotechnology.	EPA announces nanopesticides will be regulated as new pesticide active ingredients. EPA moves forward to collect data on nanomaterials under FIFRA Section 6(a)(2). (2011)	EPA must quickly develop testing protocols that identify potential adverse health and environmental effects of nano-products with pesticidal properties.
Cancel tolerances and uses for sulfuryl fluoride and assist with alternatives.	EPA announces phase-out of all food-related uses of sulfuryl fluoride (2011), then reopens comment period on the proposed tolerance revocation and stay request for the chemical based on concerns about availability of alternatives. (2012)	EPA must uphold its decision to revoke tolerances for sulfuryl fluoride, given that organic practices are available and effective.

law as burdensome, and lobbied congressional representatives to support legislation to dismantle the act's jurisdiction over pesticide discharges. Similarly, several riders have been quietly inserted into pieces of legislation that attack U.S. judicial review of the sale and planting of GE crops, as well as limit regulatory authority of USDA and EPA to analyze GE materials. Thus far, these legislative pieces have stalled in Congress.

A Second Obama Administration

Moving Forward To Transform Pesticide Regulation

There is still much work to be done moving forward with a second Obama Administration. The key priorities are to elevate organic management policy and practice and end hazardous and unnecessary pesticide use, while embracing a more precautionary approach to toxics policy. The U.S. needs a new policy direction to shift away from a reliance on toxic chemicals in agriculture, industry and consumer goods, and transition to greener, more sustainable alternatives that can help reverse the contamination of air, water, soil and food, and global climate change. The goal remains that this second Obama administration embraces improved chemical restrictions and policies for advancing practices that avoid toxic chemicals, eliminating hazards to public health, workplace conditions and the environment. In order to achieve this, a clear vision is needed for pesticide policy across all relevant federal agencies that transition us from outdated scientific approaches, technologies, and assessments that rely on toxic chemicals to policies that incentivize green technologies, promote sustainable practices and organic agriculture, and restrict hazardous chemicals.

We recommend that the new administration, in the short term, move quickly to:

1. *Protect Sensitive Species with immediate protections for honey bee and other pollinators.*

Pesticides, parasites, and other factors have been identified as contributors to global bee decline. EPA must quickly take action to place a moratorium on the neonicotinoid class of insecticides, while immediately banning clothianidin and thiamethoxam, both chemicals of this class that have

linked to adverse bee health, as was done with the herbicide Imreprelis.

2. *Promote Organic Agriculture and Systems to Reduce Environmental Degradation and Slow Global Climate Change*

USDA must place a moratorium on new plantings of GE crops until a thorough review of the human health and environmental hazards are completed. GE crops increase the use of pesticides, contaminate wild and non-GE fields, including organic, induce weed and insect resistance, and may be linked to chronic human health problems. USDA must be given direction to promote alternatives to a chemical dependent agricultural sector, recognizing organic as a viable option.

3. *Regulate Pesticides that Cause Endocrine Disruption*

EPA must accelerate the finalization of its Endocrine Disruptor Screening Program (EDSP) and review all chemicals under its jurisdiction for endocrine disrupting activity as required under the *Food Quality Protection Act* (FQPA). The agency must also produce a list of endocrine disruptors and potential endocrine disruptors based on scientific information and similar to that done in the European Union.

4. *Protect Water from Pesticide Contamination by Ensuring Consistency with Clean Water Act*

With the implementation of the NPDES permit for pesticide discharges, Congress must support EPA's authority over our environmental laws and not undermine regulatory efforts to monitor, review and restrict pesticide contamination of the environment. This includes not supporting H.R. 872 and other similar bills in Congress.

5. *Protect Farmworkers and Farmworker Children*

EPA has not gone far enough to restrict pesticide chemicals that pose a danger to farmworker communities. The agency must move quickly to ban chemicals that disproportionately impact farmworker health and that of their families, as well as enact stronger worker protection standards.

Our dependency on highly hazardous chemicals can be replaced with safer, sustainable policies and methods for how we manage unwanted insects, plants and rodents, grow food, and manufacture goods. Beyond Pesticides urges the second Obama administration to grasp this second opportunity to reverse the toxic treadmill, and provide public health and environmental protections for future generations of Americans. Chemical restrictions and new risk mitigation measures are no longer adequate when it is widely known that pesticide reliance can be eliminated with ecological and organic land and building management strategies.

Organic Materials Review

Board Restricts Ingredients and Allows Biodegradable Plastic

At its October 2012 meeting, the National Organic Standards Board (NOSB) provided key recommendations on petitions to amend the *National List of Allowed and Prohibited Substances* (National List). The NOSB's recommendations, in accordance with its statutory mandate "to assist in the development of standards for substances to be used in organic production" focused on a number of issues including ingredients allowed in organic infant formula, the review of nondisclosed or "inert" ingredients in pesticide formulations, the snail and slug killing material ferric phosphate, and biobased bioplastic mulch film.

Recommendations were transmitted to the Secretary of Agriculture—who may not expand the NOSB recommendations but may limit them—and must now be subject to proposed rulemaking and another round of public comments before becoming finalized. The National Organic Program (NOP), which implements and enforces the *Organic Foods Production Act* (OFPA), responded by accepting almost all NOSB recommendations, with one glaring exception—the program did not acknowledge the Board's clear action to disallow numerous synthetic additives currently in infant soy formula labeled as organic.

The NOSB frames its decisions based on standards in OFPA, which requires a lifecycle assessment of adverse health and environmental effects of allowed materials; compatibility with defined organic practices (including consumer expectations); and essentiality to achieve organic production. In this context, the Board determines the standards for what is allowed, not allowed, and required for organic certification. Generally speaking, natural materials are allowed as production inputs unless spe-

cifically prohibited, and synthetic materials are prohibited unless specifically allowed. Both nonsynthetic and synthetic materials must be listed in order to be used in processing of organic food. The Board has distilled the requirements of OFPA into four categorical criteria:

1. Does the material cause adverse impacts on the environment?
2. Is the substance essential for organic production?
3. Is the material compatible with organic practices?
4. Is the commercial supply of the substance [for ingredients in processed foods] as organic, fragile or potentially unavailable?

NOSB Acts to Limit Synthetics

In its oversight role to advance organic production in compliance with OFPA, the NOSB recently decided to reject synthetic chemicals that it views as incompatible with organic agriculture. Because of a general commitment to increasingly strong organic standards, a number of chemicals were disallowed for listing on the National List, including: oxidized lignite, a proposed soil amendment; propylene glycol monolaurate, an acaricide (mite poison); sulfuric acid, a stabilizer for digested poultry manure; and nonanoic acid, an insecticide.

The NOSB also voted to prohibit the use of rotenone, a non-synthetic pesticide, in organic crop production as of January 1, 2016. Rotenone was voluntarily cancelled in the U.S. by the manufacturer and is in the process of being phased out due to health risks such as Parkinson's disease; however, the substance is still in use in other countries. Thus, the Board found it necessary to clarify the listing of rotenone as a prohibited non-synthetic substance, allowing a three-year transition period for international use on crops, principally bananas.



Organic Infant Formula

The push to eliminate non-essential ingredients was further advanced by a series of proposals on organic infant formula. Beyond Pesticides supported their elimination, as they are synthetic macronutrients that are not compatible with organic principles. Additionally, the use of synthetic antioxidants as preservatives in organic food is explicitly prohibited in section 205.600(b)(4) of the organic rule, leading to the rejection of the chemical antioxidants ascorbyl palmitate and beta carotene (Vitamin A), which are used to preserve the quality of polyunsaturated fatty acids.



Numerous synthetic additives have been allowed in infant soy formula labeled as organic, while the National Organic Standards Board (NOSB), has recommended removal of seven.

Infants are not able to process excess nutrients as well as adults, causing possible problems of overfortification. Thus, the NOSB struck down the following chemical additives for use in infant formula based on the Food and Drug Administration (FDA) classification as non-essential ingredients: ascorbyl palmitate and beta-carotene, L-carnitine, lutein, lycopene, nucleotides, and taurine. These additives were not without their proponents, with several close votes for ingredients, including L-carnitine, lutein, and nucleotides. However, because a decision to list a substance on the National List requires a two-thirds majority vote, these additives did not pass the NOSB.

Of the synthetic ingredients proposed for infant formula, only one was passed almost unanimously –L-methionine, a synthetic substitute for nutrients that naturally occur in human milk. The chemical is now allowed in infant formula made with soy-based protein, and the majority of the Board supported its use because it is classified by FDA and the European Union as an essential nutrient in soy infant formula. The inclusion of L-methionine is certainly controversial, with some, including Beyond Pesticides, arguing that soy infant formula (and the synthetic and nonorganic additives that make it possible) do not meet the health effects, essentiality, and compatibility criteria for listing materials on the National List for use in products labeled “organic” or “100% organic.” According to the pediatric expert from the American Academy of Pediatrics at the NOSB meeting, there is rarely a medical requirement for soy-based formula. For those rare cases in which it is necessary to have an alternative to breast milk, Beyond Pesticides supports high quality formula labeled “made with organic milk.” Because soy formula is sometimes preferred for other reasons, formula with any synthetic ingredient could be labeled “made with” or-

ganic soy (instead of “organic” or “100% organic”). There is still some question as to whether soy formula can be marketed without the preservatives that were rejected by the Board, based on statements made by the International Formula Council.

Nondisclosed “Inert” Ingredients

In a landmark decision, the NOSB developed a workable policy and procedure to subject inert ingredients to full review under the *Organic Foods Production Act*. The recommendation contains new regulatory language, a series of steps to use in preparing for inerts review, screening guidelines for Technical Evaluation Reports (TERs) to address a tentative list of the proposed groups, and a rough timeline for review and completion. An Inerts Working Group (IWG) consisting of representatives of the NOSB, including Beyond Pesticides’ Jay Feldman, the National Organic Program (NOP), and the Environmental Protection Agency (EPA), in consultation with the Organic Materials Review Institute (OMRI) and the Washington State Department of Agriculture (WSDA), developed the process and will continue to fine-tune it.

The recommendation created a five-year time frame in which the Crops Subcommittee will evaluate inert ingredients currently in use in organic agriculture that are not exempt from pesticide registration under the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA) section 25(b). This includes former EPA List 4B and List 3 inerts in pheromones that were identified through information supplied by OMRI and WSDA. It also includes inert ingredients that have been previously petitioned, and a call for so-called “other” inert ingredients to be identified by manufacturers. This list is 127 individual substances that have been categorized into 16 groups

and 9 unique chemicals. The full group listing, including the list of chemicals, will be presented at the Spring 2013 NOSB meeting. It is expected that 4-6 groups of chemicals will be evaluated every year during the five-year period beginning in 2013. Although this proposal will require a large amount of work, rulemaking is expected to be completed by October 2017, when the inerts allowance is scheduled to sunset.

Issues Still to Tackle in Organic

Despite serious questions from Beyond Pesticides and hundreds of concerned citizens who submitted public comments to the NOSB, some synthetic materials were allowed to continue in use or approved for introduction. Under OFPA, materials on the National List are reevaluated every five years, in a process of continual improvement through elimination of unnecessary or harmful inputs. The snail and slug bait, ferric phosphate, which was petitioned to be removed from the National List, was allowed to continue in use pending a review of its controversial inert ingredient under the Board's inerts review plan. At issue for Beyond Pesticides is the active properties of the "inert" and what Beyond Pesticides believes is an improper categorization in the original petition. Additionally, biobased mulch film, a biodegradable plastic mulch, was recommended for allowance in organic agricultural production without requiring a time frame for its biodegradation in soil, although the NOP agreed to guidance.

Ferric phosphate

Ferric phosphate, a relatively innocuous material, was petitioned to be removed because it must necessarily be paired with ethylenediaminetetraacetic acid (EDTA), originally classified by the Board as an inert compound that causes demonstrable harm to earthworms and beneficial soil organisms. Indeed, while ferric phosphate is listed as the active ingredient in these molluscicides, all of the 13 products available for sale in the U.S. also include EDTA. Despite concerns that this material works as a harmful synergist, the Board has decided to list EDTA as an "inert" ingredient and therefore allowed under section 205.601 (m)(1). This ingredient will be evaluated again in the process of reviewing all inerts in organic production, described above.

The debate affects products like Sluggo, one of the most popular ferric phosphate-based slug and snail bait, which was originally approved for registration in 1997 and added to the National List in 2005. While the NOSB relisted ferric phosphate during its sunset review in 2010, it rejected the proposed slug and snail bait uses of sodium ferric hydroxyl EDTA in 2007. To confound the situation, ferric phosphate may still be paired with EDTA, which was

determined to be harmful to human health and the environment. The Board cited concerns that it is persistent in the environment, concerns which have been validated by the Agricultural Research Service in its Supplementary Technical Review of EDTA.

Unfortunately, organic farmers have become reliant on ferric phosphate-based products, such as Sluggo, and very few have supported the delisting of ferric phosphate, finding other methods cumbersome and ineffective for large-scale organic production. The comments of Michael Christensen, a grower of organic strawberries, raspberries, blueberries and blackberries in southern California, typify the sentiment of many organic farmers that alternatives to ferric phosphate are ineffective. He said, "Following and cover-cropping production systems foster pest mollusk populations which not only damage cover crops but also persist to damage or destroy subsequent crops; agronomically challenging high value berry crops depend upon an effective molluscicide to remain economically viable; crop losses of even a few percent in our high cost and high value crops can mean the difference between a profit and a loss for the grower; ferric phosphate is the only effective, economically viable organic treatment available." These concerns were taken into consideration by the NOSB, which relisted the ingredient.



Slugs can be devastating to crops, destroying the leaves of established plants and making them vulnerable to fungi and other diseases. Fortunately it is possible to control these mollusks without the use of harmful chemicals.

Biobased mulch films

Petitioned for use as a "biodegradable biobased bioplastic mulch" and renamed by the NOSB as "biobased mulch film," the Board, in a 12-3 vote, recommended allowance of this material, widely used in Europe and Canada under their organic standards. Beyond Pesticides held the minority position that biobased mulch film should not be allowed in organic production without specific monitoring for degradation, due to concerns raised in the



Bioplastic mulch films like the one above (which is a PLA-Blend Bio-Flex) closely resembles petroleum-based mulches. However, instead of being collected after use, mulch films are tilled into the soil and under ideal conditions decompose into water and carbon. Photo courtesy F. Kesselring, FKUR Willich.

research that showed inconsistent biodegradability. Biobased mulch films work in a similar way to petroleum-based polyethylene mulch films and are considered to be more environmentally friendly because of their degradation to carbon and water under ideal conditions and proper soil incorporation. The plastic is used to inhibit weed growth, raise soil temperatures, and conserve water. Indeed, mulch can also allow crops to mature earlier, produce higher yield, and improve resistance to insects and diseases. However, unlike petroleum-based plastic products, which under organic law must be removed at the end of the season and land-filled or recycled, biobased mulch films must be tilled into the soil to achieve 90% biodegradation, as required by the new NOP rule. While it is considered to lower labor costs, eliminate landfill costs, and reduce the carbon footprint of organic farms, its complete biodegradation has come into question and requires more guidance as to where, when, and how it can be used without violating the intent of OFPA.

There are several reasons to be concerned about the use of biobased mulch films in organic agriculture. First, research regarding degradation has only been undertaken in the laboratory and not in the field. While laboratory data indicates that biobased mulch films do degrade completely by the end of the season, results are based on optimum managed conditions with mixed soils, optimum moisture, and high temperatures, which may not reflect

the reality found in the field. Incomplete degradation raises environmental concerns, including contamination of nearby ecosystems for plastics blown away, with consequences for wildlife.

Moreover, the addition of metal salt catalysts and synthetic pigments pose potential risks for environmental health. Metal-salt catalysts such as tin compounds used in making some biobased mulch films, are known to have impacts on the environment, particularly contributing to heavy metal contamination of the soils. Similarly, synthetic pigments such as titanium dioxide and carbon black have

potential for accumulation in the soils. The NOP already prohibits colored inks for use in newspaper mulches for environmental concerns. These chemicals are resistant to breakdown and therefore cannot be considered completely “biodegradable.”

Based on the NOSB vote, the use of biobased mulch films in organic production, if they are approved through the rulemaking process, will be subject to specific NOSB-imposed requirements that include the following:

- To list on §205.601(b)(2) Mulches: (iii) Biodegradable biobased bioplastic mulch meeting the following criteria: (A) Completely biodegradable as shown by: 1) meeting the requirements of ASTM Standard D6400 or D6868 specifications, or of other international standard specifications with essentially identical criteria, i.e., EN 13432, EN 14995, ISO 17088; and 2) showing at least 90% biodegradation absolute or relative to microcrystalline cellulose in less than two years, in soil, tested according to ISO 17556 or ASTM 5988; (B) Must be biobased with content determined using the ASTM D6866 method; (C) Must be produced without organisms at feedstock derived from excluded methods; and (D) Grower must take appropriate actions to ensure complete degradation.

These recommendations would ensure that organic farmers com-

ply with international standards including the international Organization for Economic Cooperation and Development (OECD) ecotoxicity standards for plant germination and growth. These recommendations allowing biobased mulch film were informed in part by broad support and comments from organic farmers, organic associations, and consultants alike that support its use and are concerned about the current use of black plastic.

Although Beyond Pesticides originally supported the decision to add biodegradable mulch to the National List, further information revealed the inability of the product to completely degrade. NOSB member Jay Feldman supported explicit and defined language within the motion regarding requirements for degradation, and will work with the NOP during the rulemaking process, which it has agreed to do. Within the motion, the Board prohibited biobased film derived from genetically modified organisms (GMOs) and stated its expectation that nanomaterial would not be permitted in accordance with the NOSB's 2010 policy. The Board is also suggesting that the concerns surrounding biobased mulch film be addressed as a research priority for the coming year.

NOP Holds Up Removal of Infant Formula Ingredients

While NOP endorsed most NOSB recommendations from the Fall 2012 meeting in its February 27, 2013 memorandum, it failed to acknowledge and endorse clear Board action to reject the allow-

ance of seven synthetic additives to infant soy formula labeled organic, which are currently in formula labeled organic. NOP's silence on this issue in its memo leaves future program action uncertain, and appears to leave the door open to continued use. However, under OFPA, the Secretary of Agriculture may not add materials (statutory language is "may not include exemptions for use of specific synthetic substances") to the National List that have not been recommended for listing by the NOSB, so inaction on the part of the NOP regarding the seven synthetic nutrients would, in fact, violate OFPA.

Take Action

Beyond Pesticides advances full transparency of NOSB actions, with public access online on all the meeting deliberations and underlying science, including meeting notes of subcommittee deliberations. These resources are available so that the public, farmers, and organic consumers may inform board decisions. Because the process of review by the NOSB is a transparent process with full disclosure, the public has access to the underlying science and the meeting notes of subcommittee deliberations. For current information on NOSB decisions, past and present, see Beyond Pesticides' *Keeping Organic Strong* webpage at <http://www.beyondpesticides.org/organicfood/action/index.php>.

This piece was compiled by Xoco Shinbrot and Drew Toher based on analysis by Terry Shistar and Jay Feldman.





A Is For Apples, Alar, and Antibiotics

...and A Call to end antibiotic use in apple and pear production, especially organic

*Eds. Note. To most organic consumers, finding out that antibiotics are used in organic and conventional apple and pear production will come as a surprise. The fact has not been hidden –many members of the National Organic Standards Board in their public decision making process have been attempting to remove these antibiotic uses (the only currently allowed in organic production) for nearly a decade. Despite its very public decision making process, it's fair to say that most consumers are not aware of the Board's work to oversee the National List of Allowed and Prohibited Substances and advise the Secretary of Agriculture on all issues related to the Organic Foods Production Act. With the growth of the organic market to \$30 billion and increasing public scrutiny of organic practices however, most consumers may assume antibiotic use in apple and pear production was disallowed when their use was prohibited from organic animal and dairy production in 2000, as federal organic standards were taking shape. The agricultural use of antibiotics –in this case for a bacterial disease known as fire blight (-*rwinia amylovora*)– represents a serious public health concern. Its use contributes to bacterial resistance in human pathogens that are increasingly difficult to control with the same antibiotics when they are life-threatening in a medical setting. Beyond Pesticides wrote about this subject in the Summer 2011 issue of Pesticides and You, after the NOSB took up the topic earlier that year and established a 2014 phase-out of antibiotics that is up for reconsideration.*

By Terry Shistar

The National Organic Standards Board (NOSB) in April 2013 is again considering whether to eliminate antibiotics used in organic apple and pear production. The Washington State Horticultural Association, California Pear Advisory Board, and U.S. Apple Association, representing organic apple and pear growers in California and the Pacific Northwest, petitioned the NOSB last year to allow oxytetracycline's continued use. The Board also received a petition in 2013 from the same group of petitioners, joined by the Michigan State Horticultural Society, to continue the use of streptomycin, which it will take up at its November 2013 meeting. The debate is reminiscent of what happened 23 years ago when the "Alar scare" threatened conventional apple growers. It is ironic that the now-thriving organic apple industry, which grew from the collapse of the apple industry during the Alar "scare" is now ignoring a similar threat to not only organic apples, but perhaps public trust in the organic label. Peter Montague, PhD, then-director of the Environmental Research Foundation, referred

to the events surrounding Alar in apples as the "Alar rebellion." Will we now see an "Antibiotics rebellion"?

A is for Apples (and Alar)

The growth regulator daminozide, or Alar, was first registered in 1968. Its function was to prevent apples from falling off the tree when they ripened, which benefited apple growers, providing a longer harvest period and fruit that had fewer blemishes. Daminozide was contaminated with a reactant, unsymmetrical 1,1-dimethylhydrazine (UDMH), which was also produced when Alar was digested or when it broke down with heat –such as when apples were made into apple sauce or juice.

In 1973, concerns started surfacing about the health effects of Alar, particularly the UDMH metabolite/contaminant. A study published in the *Journal of the National Cancer Institute* found that UDMH causes cancer in mice. In 1977, another mouse study confirmed the first, and research was published showing that it causes cancer in hamsters. The following year, there was a study

conducted by the National Cancer Institute (NCI) providing evidence that UDMH causes cancer in rats. Although these studies should have been enough to ban Alar, it was not until 1985 that EPA announced its intention to initiate cancellation of Alar —after UDMH had been judged a “probable human carcinogen” by the International Agency for Research on Cancer (IARC), the Carcinogen Assessment Group within the U.S. EPA, and the U.S. National Toxicology Program (NTP).

EPA backed down in 1986, saying it needed more studies. Nevertheless, some grocery chains and processors of juice and baby foods announced they would not accept Alar-treated apples, and the Washington State Apple Commission encouraged growers not to use the growth regulator. In spite of the announcements, 30% of the apples sampled at one of those grocery stores in 1988 did contain Alar.

In 1989, the Natural Resources Defense Council (NRDC) issued a report that looked at the hazards of 23 pesticides found in fruits and vegetables commonly consumed by children under the age of six, concluding that the pesticide regulatory system was inadequate to protect children. The CBS documentary show *60 Minutes* featured one of those chemicals —Alar, which was still being used in spite of the actions of processors and grocery stores— in a segment called “A is for Apples.” Notwithstanding industry claims that Alar was used on only 5% of apples, independent samples found residues of Alar and UDMH in 22-79% of apples across the country. The public reacted swiftly, cutting apple purchases by 50%.

Despite their warnings to apple growers three years before and the letter they had received from acting EPA Administrator John A. Moore, PhD, stating, “There is an inescapable and direct correlation between exposure to UDMH and the development of

life-threatening tumors in mice,” the Washington State Apple Commission and other apple industry groups attacked the NRDC report and the *60 Minutes* segment. Prior to the public backlash and adverse economic impact on the apple growers, their representatives principally sought to block regulatory action year after year on a chemical that EPA had targeted for cancellation. (See if this sounds similar to the current situation with antibiotics, discussed below.) Following the *60 Minutes* broadcast, they were forced to hire a PR firm to run ads using the claim of the chemical’s manufacturer, Uniroyal, that you would have to eat a box-car-load of apples each day to be harmed by Alar. On November 28, 1990, apple growers in the Washington state filed a libel lawsuit against CBS, NRDC, and the PR firm. The case was dismissed in 1992, the court’s opinion stating, “[T]he growers have failed to raise a genuine issue of material fact as to the falsity of the broadcast.” We will see the failure to address issues of material fact again.

The apple industry claimed that only a small percentage of apples was treated with Alar, but the public reaction affected all apple growers. That season Washington growers reported the industry had suffered a \$100 million loss by May. The drop in the price of apples put many growers out of business.

The Explosive Growth of Organic Apple Production

Dominick Bonny, writing for the *Wenatchee Business Journal* said:

It was a seminal moment for Washington state apple growers and Roger Pepperl, marketing director for Stemilt Growers said the reason for Stemilt’s investment in organics goes back to ‘89, Alar, and Meryl Streep.

“She was talking that everyone that ate apples was going to get cancer from eating Alar residue and she ended up be-





ing wrong, it was an approved substance and later on they found out she was dead wrong. It wasn't carcinogenic and it almost killed our apple industry," he said. "So in 1989, Tom Mathison, who was our founder, said he was going to work on never being held captive by people and chemicals again."

(Notice the continued denial of the facts about Alar.) Since then Stemilt's organic program has grown so large it accounts for 26 percent of Washington's organic apples and 32 percent of the Pacific Northwest's organic pears.

David Granatstein, statewide coordinator for the Center for Sustaining Agriculture and Natural Resources at Washington State University, has studied trends in organic apple production, especially in Washington state. Mr. Granatstein said,

[T]he effect of the Alar incident is obvious in the Washington data. Growers were motivated to try organic production in 1990 due to low demand and prices for conventional apples. At the time, the organic program rules required only a 1-year transition, but the rule was slated to change to a 3-year transition over the next 2 years. Thus, many growers withheld conventional treatments after harvest in 1989 and, by follow-

ing the organic production regime, had a certified crop by autumn 1990. Significant attrition of these new organic growers occurred in 1991 and 1992, mainly due to problems controlling codling moth in apples and to reduced prices for organic apples, caused by the rapid increase in supply.

According to Mr. Granatstein's data, acreage in organic apples in Washington state increased from 807 acres in 1993 to 14,790 acres in 2010. As he has also shown, the growth of the acreage in organic apples comes largely from the transition of nonorganic apple growers to organic. While we can only applaud the large-scale transition to organic practices, the fact that such a high proportion of organic apple growers originated as conventional growers—and may still have dual operations—has implications for current practices and dependencies.

Apple growers making the transition to organic practices do not just start off with new orchards. They have trees planted according to the conventions of chemical-intensive orchard management. This means that varieties are the current favorites in the conventional market, grown with antibiotics because they are very susceptible to fire blight. Other practices, such as the spacing of trees, that have an impact on the movement of the fire blight bacteria, are also carryovers from chemical-intensive management systems.

Similar to those representing chemical-intensive apple growers during the Alar controversy who issued statements denying the cancer causing chemical's threat and accused public health advocates of using "scare tactics," those petitioning for continued antibiotic use in organic apple and pear production seem to be dismissing the seriousness of a public health problem.

A is for Apples (and Antibiotics)

Apples and pears are susceptible to the bacterial disease fire blight, caused by *-rwinia amylovora*. Although fire blight is a problem for apple and pear growers throughout the U.S., growers in the arid areas of eastern Washington do not have to contend with so many other diseases, so fire blight stands out as a problem there. In addition, fire blight can destroy whole trees, especially younger trees, in a short time frame, so it is considered a more serious disease than those that affect a season's productivity.

Tetracycline and streptomycin are both registered for use in fruit trees, and both are currently allowed for use in organic apple and pear production to control fire blight. In recent years, there has been a trend toward greater dependence on the antibiotics and a greater concentration of susceptible varieties grown in high densities on susceptible rootstocks.

The Connection to Antibiotic Resistance

At the same time, antibiotic resistance is a real and urgent public health threat. Both tetracycline and streptomycin are considered by the World Health Organization to be of "critical importance"

to human medicine. They are used in a way –broadcast spray on trees– that exposes bacteria in the orchard, particularly in the soil, to the antibiotic. Current science shows that environmental exposure to antibiotic use in the environment is the major cause of development and spread of antibiotic resistance in human pathogens. The spread of antibiotic resistance does not require contact between the antibiotic and human pathogens because the major means of spreading antibiotic resistance is through the transfer of genes between different bacteria. Nevertheless, there is a tolerance set by the U.S. Environmental Protection Agency (EPA) for the antibiotics on the fruit, which allows its food production use and residues in the orchard and the fruit. Antibiotic uses resulting in low residues (sub-therapeutic or sub-inhibitory levels from a medical perspective) can create a high health risk. Tetracycline and streptomycin resistance is evident and expected to grow if urgent use precaution is not exercised.

An article in the Summer 2011 issue of *Pesticides and You* includes a short history of the debate before the National Organic Standards Board (NOSB) over antibiotic use in apples and pears. In short, the use of tetracycline and streptomycin was approved reluctantly in 1995 by the NOSB, and each time they have come up for review, the Board has warned growers that it intends to end their use. Just as apple growers ignored early warnings about the findings showing that Alar/UMDH causes cancer, the representatives of organic apple and pear growers now respond to the concerns of the medical and scientific community regarding antibiotic resistance with the insistence that it is necessary or essential to production. To the extent that the petitioners for continued use have addressed antibiotic resistance in their petition, they have ignored current science regarding gene transfer and the impact of sub-therapeutic doses. In ignoring the threat of antibiotic resistance, they dismiss a critical public health threat.

Alternatives to Antibiotics

How great is the need for crop use of antibiotics? As pointed out in the Summer 2011 article, many, if not most, growers have ignored basic organic principles –like the choice of cultivars and density of planting. On the flip side, however, over a third of the production of Washington state organic apples and a quarter of the organic pear production are raised according to rules that prohibit antibiotic use, a prohibition required for fruit exported to

the European Union. New materials and methods are being developed, and the growers continue to point to something that is just around the corner. However, the tools and varieties are currently available.

Organic Integrity?

When faced with the looming loss of Alar, apple growers ignored the public health threat. As a result, when the word got out, they suffered huge losses. Now the stakes are higher –consumers understand (or think they understand) that organic products are free of antibiotics. Organic dairy producers in particular have sought to distinguish themselves from others through the “Organic means antibiotic-free” claim. During the Alar rebellion, apple growers using Alar brought down apple growers who didn’t use Alar. Will organic dairy and the organic label’s value be hurt this time?

What You Can Do

At its April meeting, the NOSB will be deciding whether to uphold the 2014 expiration date of tetracycline’s use in organic production. For information about how to send your comments, see the Keeping Organic Strong section of the Beyond Pesticides website: <http://bit.ly/XDoVJS>. In addition, see the shopping hints in the Summer 2011 issue of *PAY*. In addition to submitting comments to the NOSB, let the National Organic Program at USDA and the U.S. Secretary of Agriculture know how you feel about the use of antibiotics in organic apple and pear production.

A fully cited version of this article is available online.



Pediatricians Issue Warnings and Recommendations on Pesticides



By Nichelle Harriott

In late 2012, the American Academy of Pediatrics (AAP) took bold and pioneering moves recognizing the hazards that children's exposure to pesticides create, and the vital role organic foods play in reducing children's exposure. This was the first time the Academy made a statement on pesticides and the benefits of organic. The Academy first published a clinical finding in October 2012 that states that reducing pesticide residues in food is beneficial for children's health. A few weeks later, it released its policy statement on pesticides, which identifies the current shortfalls in medical training, public health tracking, and U.S. regulatory action on pesticides. This groundbreaking stance on pesticides from a premier medical institution in the U.S. goes far to support broader efforts to educate consumers on the hazards posed by toxic pesticides, especially the risks posed to children, influence chemical reform, as well as credit organic with lower pesticide exposure than food grown in chemical-intensive agriculture. It also serves as a sobering wake-up call for government agencies and elected officials to protect our children and environment from toxic compounds. With these new recommendations from the Academy, Beyond Pesticides urges the U.S. to swiftly act to adopt policies that support a national shift from chemical dependency, including a broader adoption of organic practices, in order to safeguard the health of future generations.

Clinical Report on Organic Food

In October 2011, AAP published, in the journal *Pediatrics*, "*Organic Foods: Health and Environmental Advantages and Disadvantages*," which is described as a clinical report reviewing the health and environmental issues related to organic food production and consumption. Even though there were conflicting and negative media reports of AAP's report on organic foods, the Academy is clear that organic foods do provide health advantages

by way of reducing exposure to pesticides, especially for children. The Academy not only identified that children are especially vulnerable to pesticides, but also reported "sound evidence" that organic foods contain more vitamin C and phosphorus.

"At this point, we simply do not have the scientific evidence to know whether the difference in pesticide levels will impact a person's health over a lifetime, though we do know that children—especially young children whose brains are developing—are uniquely vulnerable to chemical exposures," said Joel Forman, MD, FAAP, a member of the AAP Council on Environmental Health and one of the lead authors of the AAP clinical report.

But more striking is the Academy's recognition of the linkage between organic systems and improved environmental health. The report notes that choosing organic is based on larger environmental issues, as well as human health impacts, like pollution and global climate change, making it a watershed moment in this medical group's acknowledgement of the health advantages of organic while also linking organic systems to broader environmental benefits.

According to the report, "In terms of health advantages, organic diets have been convincingly demonstrated to expose consumers to fewer pesticides associated with human disease. Organic farming has been demonstrated to have less environmental impact than conventional approaches." The report also goes on to note that organic farming can be competitive and yields comparable to those of conventional farming techniques. The report addresses several topics routinely debated when it comes to choosing between organic and conventional food, including nutritional content, use of antibiotics and hormones.

Organic vs. Conventional Foods

On nutritional content, the Academy notes that research comparing the nutritional value of conventionally grown produce and organic produce is "not definitive," citing nutritional content as being affected by various factors, including geographic locations, soil characteristics, and climatic conditions. Even though the report acknowledges sound evidence that vitamin C and phospho-

rus content in organic foods are higher, it states that there is no convincing evidence of a substantial difference between the nutritional content of organic and conventional foods.

The report also notes that the “biological effects in humans, if any, are unknown,” when it comes to hormone supplementation, which is prohibited in organic. Furthermore, the Academy points out that more study is needed to investigate the risks to women who eat hormone-treated animals and the development of breast cancer. Importantly, the evidence is clear that the use of these agents can promote the development in drug-resistant organisms, which can then spread through the food chain. According to AAP, organic farming, which prohibits the use of nontherapeutic antibiotics in animal production, reduces this threat and, by extension, lowers the risk of human disease caused by drug-resistant organisms. [While currently under review by the National Organic Standards Board, organic standards still allow in apple and pear production for fire blight. See page 13]

Organic Systems Have Less Adverse Environmental Impact

In drawing a parallel between organic systems and a healthy environment, the report

notes that organic farms use less energy and produce less waste, have soils with higher organic quality and water retention. A review of studies found that organic systems can have comparable productivity to conventional fields, while using less pesticides and reducing environmental pollutions.

AAP recommends that, “Pediatricians should incorporate this evidence when discussing the health and environmental impact of organic foods and organic farming while continuing to encourage all patients and their families to attain optimal nutrition and dietary variety.” The report concludes that the most important thing for children is to eat a wide variety of produce, and suggests that pediatricians talk to their patients about the potential health and environmental benefits of choosing organic.

Policy Statement on Pesticide Exposure

A few short weeks after the organic report, the Academy released a landmark policy statement presenting its position on pesticides. The document, “Pesticide Exposure in Children,” recommends a recognition and reduction of problematic pesticide exposures. Acknowledging the risks to children from both acute and chronic effects, AAP’s policy report provides recommendations to both pediatricians and government health agencies.

The report discusses children’s exposure to pesticides every day in air, food, dust, and soil, observing that children also frequently come into contact with pesticide residue on pets and after lawn,

garden, or household pesticide applications. While diet is likely the main pathway for pesticide exposure in children, AAP, cites scientific findings that switching children to an all-organic diet has an immediate and substantial decrease in the concentration of pesticides in their bodies. In the past decade, an expansion of the evidence showing adverse effects after chronic pesticide exposure has been observed by the Academy, with strong links between pesticides and health effects to children—especially pediatric cancer and adverse neurodevelopment. However, low birth weight, preterm birth, congenital abnormalities, cognitive deficits (ADHD, Lower IQ) and asthma are also increasingly cited as being related to pesticides. Pediatricians, according to the Academy, should become familiar with the “subclinical” effects of chronic exposures.

Other Pesticide Policy Recommendations

The Academy points out that pesticide product labels are critically deficient because they do not disclose all pesticide ingredients and other pertinent information on chronic toxicity. It advises government to require manufacturers to disclose ingredients, either on the product’s label or on the company’s web site, including the creation

of a “risks to children” section, which should list chronic or developmental health concerns for children. While acknowledging that pediatric care providers have a poor track record for recognition of acute pesticide poisoning, the Academy recommends making pesticide-related suspected poisoning universally reportable and supports a systematic central repository of such incidents to optimize national surveillance.

Further, the Academy advises government to set a goal of reducing overall exposure by promoting methods and practices which minimize pesticide contact. Government can accomplish this by supporting least-toxic pesticide alternatives through the adoption of integrated pest management (IPM), according to the Academy. AAP recommends that government provides economic incentives to growers who adopt IPM, and supports research to expand IPM in both agriculture and nonagricultural pest management. Federal support for the adoption of community education and outreach, letting people know when pesticide spraying will occur in public areas, and the strengthening of procedures and enforcement standards for removing hazardous products are also cited as areas where government should focus its efforts.

Finally, the Academy recommends that providers speak with the parents of their patients about the risks associated with pesticide use. According to the policy statement, “Pediatricians can play a role in promotion of development of model programs and practices in the communities and schools of their patients.”

“Children encounter pesticides daily and have unique susceptibilities to their potential toxicity. Acute poisoning risks are clear, and understanding of chronic health implications from both acute and chronic exposure are emerging. Epidemiologic evidence demonstrates associations between early life exposure to pesticides and pediatric cancers, decreased cognitive function, and behavioral problems.”
American Academy of Pediatrics, Council on Environmental Health

Pandora's Lunchbox

How Processed Food Took Over the American Meal

Melanie Warner, *Simon & Schuster, New York, NY, 2013, 288pp.*

This book by former *New York Times* food industry reporter Melanie Warner directly relates to our major concerns about what is in our food, how it gets there, and how we know about it. While not directly focused on processed food labeled organic, the analysis helps us to answer the question of whether the allowance of certain processing practices and additives taints an organic food product and disqualifies it from displaying the organic label.

According to Ms. Warner, “processed food” is defined as something you can’t make in an ordinary well-stocked kitchen. This definition, however, is a little different from the usual definition, which would include cooking, canning, and other normal operations as food processing.

Although the book does not discuss the *Organic Foods Production Act* (OFPA), it offers insight into the difference between the OFPA approach to regulating food production and the regulation of conventional foods.

OFPA, the law governing organic production and handling differs from laws like the *Federal Insecticide, Fungicide, and Rodenticide Act* (FIFRA, which governs pesticides) and the *Federal Food, Drug, and Cosmetic Act* (FFDCA, which covers food additives) in its presumption that synthetic inputs (to crops, livestock, or food handling) will not be permitted unless they (1) do not cause harm to humans or the environment from manufacture through use and disposal, (2) are essential in organic production and handling, and (3) are compatible with organic principles. FIFRA and FFDCA, on the other hand, do not consider essentiality, consider harm only in use (balanced against ill-defined “benefits”), and do not have guiding principles.

Some of the additives recently considered by the National Organic Standards Board (NOSB) are addressed in this book. The section describing the manufacture of isolated soy protein, which is the foundation of soy infant formula, leaves no doubt that it is synthetic. The NOSB will be considering sugar beet fiber and barley beta fiber as replacements for fiber lost in processing, and I learned from this book that fiber is added to cereals because less than half of the fiber in whole grains can survive the “heat, mechanical mixing, shear, hydrolyzation” and other treatments of the cereal. The section on soy oil, which points to many hazards of the

dependence on this one oil in processing (like hexane used in extracting and toxic aldehydes produced in heating the oil), clarifies for the reader why so many processors are now adding omega-3 oils—soy oil is extremely high in omega-6 fatty acids, which means products containing it lack the necessary balance of omega-3 and omega-6.

One of the most interesting sections considers the addition of synthetic vitamins and minerals, an accepted practice in both conventional and organic food processing. The book looks specifically at their addition to breakfast cereals. Ready-to-eat cereals are produced by extrusion machines that mix ingredients and create products in an endless array of sizes, shapes, and flavors. Ms. Warner says, “Extrusion is undoubtedly the harshest and most nutritionally devastating way to process cereal. . . Inside the long steel barrel, starch, sugar, and protein molecules are ripped apart by twisting screws that generate large amounts of heat and pressure... The process is often referred to a “plasticization”—which neatly sums up the nutritional gist of what happens inside an extruder.” (pp. 62-63)



The vitamins most vulnerable to this process are vitamins A, B1, C, E, and folate. Following the extruder, pressure cooking, drying, and high-temperature toasting subject the cereal’s remaining nutrients to further assault. It’s no wonder that cereal makers find it necessary to add synthetic vitamins to replace lost nutrients. When labeled in 1970 as “empty calories,” cereal companies replied with the argument that they are “better than donuts.”

Since the 1930’s, the vitamins added to food have been synthesized in a laboratory. Until recently, many of them were manufactured in the United States, and the factories making them were known for the hazardous air pollutants they emitted—methanol, chloroform, and toluene. Now almost all are produced in China by fermentation processes that start with sorbitol from corn, often use genetically engineered bacteria, and result in water pollution.

Although the “better than a donut” assessment may work for conventional food production, if we apply OFPA standards, we would have to conclude that synthetic vitamins are produced by methods not allowed in organic production that result in environmental damage, and are not necessary if food is processed by means that preserve nutrients. They are “necessary” in organic only to make products that are indistinguishable from conventional.

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