From: Suzanne Hume
To: Montoya, Michelle
Subject: [EXTERNAL] Santa Rosa City Council Climate Action Subcommittee Comment
Date: Wednesday, October 4, 2023 3:43:33 PM
Attachments: City of Santa Rosa Ban Toxic Pesticides CleanEarth4Kids.org.pdf

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CleanEarth4Kids.org supports the City of Santa Rosa banning synthetic pesticides. Our letter is attached.

Wishing you a great day!

Suzanne

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Our Children's Health and Future Depend on the Actions We Take Today!

CleanEarth4Kids.org

October 4, 2023

Re: Ban Synthetic Pesticides

CleanEarth4Kids.org supports the City of Santa Rosa banning synthetic pesticides.

Pesticides are Toxic

Pesticides are a threat to human health, wildlife, and the environment. They are linked to skin, eye, and lung irritation, hormone disruption, brain and nervous system toxicity, cancer, blood and nerve disorders, birth defects, and reproductive effects. Children are particularly sensitive to these dangerous chemicals. We must do all we can to reduce, if not eliminate their exposure to pesticides

Pesticides harm human health, drift through the air, contaminate the water, poison fish, and harm aquatic life[1], coral reefs[2], and our wildlife[3].

Pesticides are a direct threat to our precious coastal resources and ecosystems.

Pesticides Harm Marine Life

Pesticides do not stay where they were used with over 98% of sprayed insecticides and 95% of herbicides drifting through the air, absorbed into the soil or running off into waterways.[4] The National Water Quality Assessment (NWQA) shows agricultural runoff as the main cause of pollution in rivers and streams.[5] Toxic pesticides harm the health of humans, wildlife and the environment.

As pesticides travel through soil and bedrock cracks, they contaminate groundwater systems which provide 70% of the water used for public and private water supplies, irrigation, and industry.[6]

Pesticides are absorbed by aquatic organisms through their skin, breathing, and mouths.[7] Long term exposure has many negative consequences for aquatic life, such as mortality, reproductive failure, egg shell thinning, suppression of the immune system, and other fish health complications such as excessive slime on fish scales and gills, cancers, tumors and lesions.[8]

PFAS in Pesticides

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[1] https://www.beyondpesticides.org/programs/wildlife/fish
[2] https://www.epa.gov/coral-reefs/threats-coral-reefs
[3] https://www.beyondpesticides.org/programs/wildlife
[4] https://archive.org/details/sustainingearthi0000mill
[5] https://www.epa.gov/nps/nonpoint-source-agriculture
[6] https://www.uky.edu/Ag/Entomology/PSEP/6environment.html
[7] https://biointerfaceresearch.com.pdf
[8] https://www.sciencedirect.com/science/article/abs/pii/S2215153222001003

Very high levels of PFAS are found in commonly used agricultural pesticides.[9] The levels show the problem is from the pesticide ingredients themselves, not just leaching from plastic containers. PFAS are commonly used as additives like surfactants (helps pesticides spray more easily) and as inert ingredients in pesticides.[10,11] Almost 70% of all pesticides introduced around the world between 2015-2020 contained PFAS or related compounds.[12]

Dangers of PFAS

PFAS (perfluoroalkyl and poly-fluoroalkyl substances) are a class of over 12,000 synthetic (man-made) chemicals[13] found in many products[14] like synthetic grass/artificial turf, food packaging, waterproofing sprays, household cleaners, stain-resistant carpet, nonstick cookware, fire fighting foam, clothing, makeup, toilet paper, personal care products, textiles, children's products and much more. PFAS as a class share many characteristics and toxicities.[15] Three PFAS (perfluorooctanesulfonic acid [PFOS], perfluorononanoic acid [PFNA], and perfluorooctanoic acid [PFOA]) are on California's Proposition 65 list as carcinogens and developmental toxicity.[16] The EPA released in June 2022 a health advisory for PFOS, PFOA and their replacements, PFBS, and GenX chemicals in drinking water.[17]

PFAS are known as "forever chemicals" as they are extremely strong and don't break down in the environment or in our bodies. Once in the body, they accumulate in the kidneys and liver with a biological half-life of 3-8 years.[18] Many states and cities have found PFAS in their drinking water. PFAS are found in the blood of 97% of Americans and even in umbilical cords.[19,20]

PFAS are toxic. According to the CDC,[21] EPA,[22] and the European Union Environment Agency,[23] PFAS are linked to low birth weight, thyroid disease, increased cholesterol, liver damage, kidney cancer, and testicular cancer. They are also linked to liver cancer,[24] diabetes,[25] endocrine disruption, and other serious health problems.[26]

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[9] https://www.sciencedirect.com/science/article/pii/S266691102200020X
[10] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3214619/
[11] https://peer.org/substantial-pfas-contamination-found-in-pesticides
[12] https://www.scientificamerican.com/article/pesticides-are-spreading-toxic-forever-chemicals-scientists-warn/
[13] https://comptox.epa.gov/dashboard/chemical-lists/pfasmaster
[14] https://www.cdc.gov/biomonitoring/PFAS_FactSheet.html
[15] https://experts.unthsc.edu/en/publications/response-to-comment-on-scientific-basis-for-managing-pfas
[16] https://oehha.ca.gov/proposition-65/proposition-65-list/
[17] https://www.epa.gov/sdwa/drinking-water-health-advisories-pfoa-and-pfos
[18] https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm
[19] https://www.atsdr.cdc.gov/pfas/health-effects/us-population.html
[20] https://www.theguardian.com/environment/2022/forever-chemicals-found-umbilical-cord-blood-samples
[21] https://www.atsdr.cdc.gov/pfas/health-effects/index.html
[22] https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas
[23] https://www.eea.europa.eu/publications/emerging-chemical-risks-in-europe
[24] https://www.insider.com/study-confirms-link-between-forever-chemicals-and-liver-cancer-risk-2022-8
[25] https://pubmed.ncbi.nlm.nih.gov/35970987/
[26] https://pubmed.ncbi.nlm.nih.gov/32476019

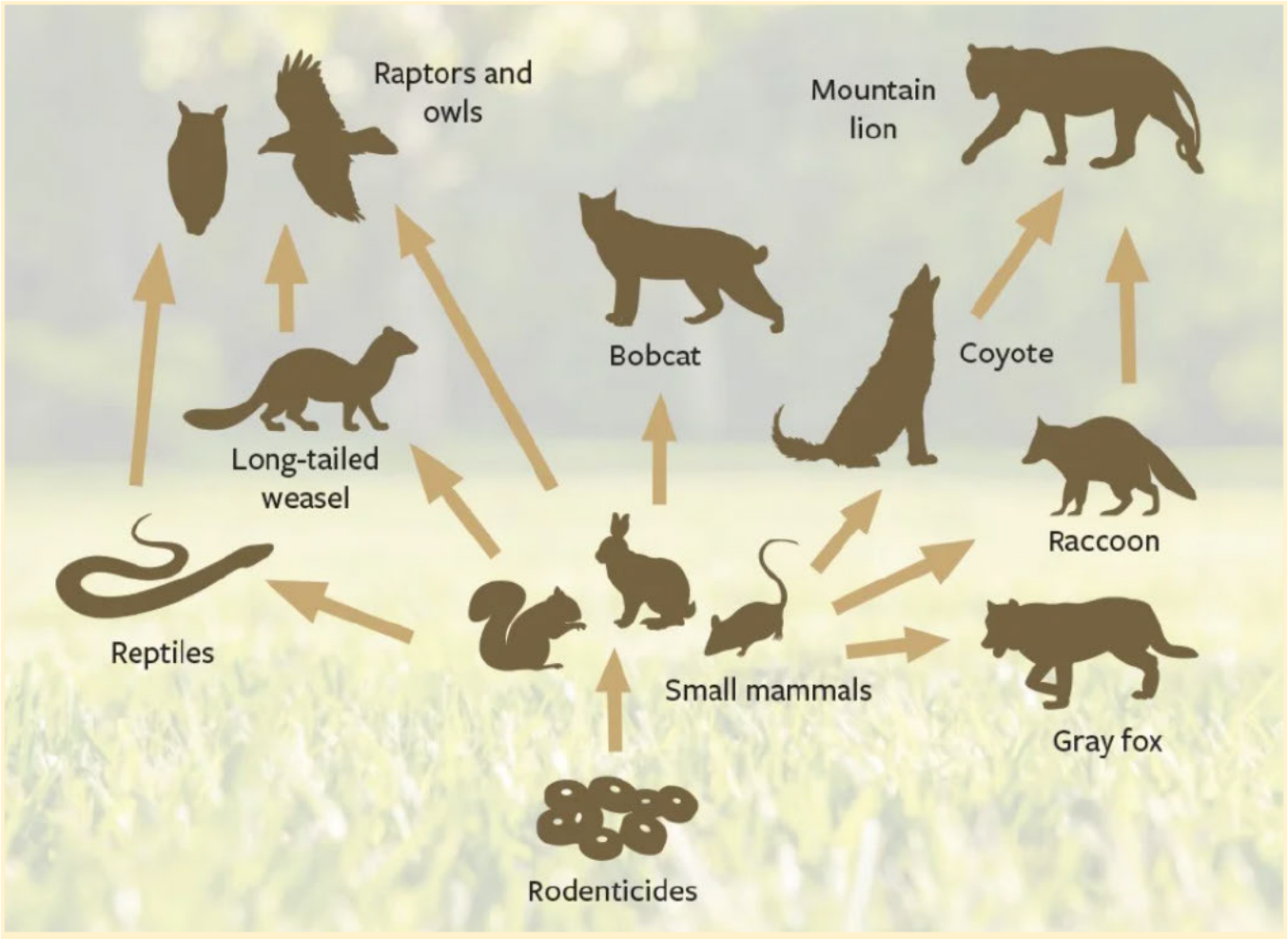
Stop the Use of Rodenticides

The California Ecosystems Protection Act of 2020 (AB 1788) banned the use of brodifacoum, bromadiolone, difenacoum, and difethialone which are SGARs (Second Generation Anticoagulant Rodenticides).[27] Those rodenticides are also pending a reevaluation by DPR. The Act was passed because data from the Department of Fish and Wildlife showed the regulations issued by DPR in 2014 had no significant reduction in the number of non-target wildlife with detectable levels of SGARs in their systems.[28] Those rodenticides are also pending a reevaluation by DPR.

Starting in July 2014, products with brodifacoum[29], bromadiolone[30], difethialone[31], and difenacoum[32] could only be used by professional exterminators and were not sold to consumers to reduce non-target exposures.[33] However, from 2014 through 2018, these poisons were found in 94% of mountain lions, 92% of bobcats, 85% of protected Pacific fishers, 83% of coyotes, and 70% of northern spotted owls.[34] Because of the additional regulations on SGARs, sales of diphacinone significantly increased after 2014.[35] The use of brodifacoum, bromadiolone, difethialone, and difenacoum was banned in 2020.[36]

Large mammals do not even have to ingest rodenticide directly; these poisonous substances can make their way through the food web and animals can be affected through secondary and even tertiary exposure.[37] These effects can reduce, change behavior, and destroy populations of plants and animals.[38] These harms can ripple up and down food chains.

[27] https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201920200AB1788&showamends=
[28] https://wildlife.ca.gov/
[29] https://pubchem.ncbi.nlm.nih.gov/compound/54680676#section=Safety-and-Hazards
[30] https://pubchem.ncbi.nlm.nih.gov/compound/54680085#section=Safety-and-Hazards
[31] https://pubchem.ncbi.nlm.nih.gov/compound/91771#section=Safety-and-Hazards
[32] https://pubchem.ncbi.nlm.nih.gov/compound/54676884#section=Safety-and-Hazards
[33] https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=44338
[34] https://www.biologicaldiversity.org/news/press_releases/2018/rat-poison-12-12-2018.php
[35] https://www.cdpr.ca.gov/docs/registration/canot/2023/ca2023-06.pd
[36] https://biologicaldiversity.org/w/news/press-releases/new-california-law-protecting-animals-
[37] https://link.springer.com/chapter/10.1007/978-3-319-64377-9_7
[38] https://www.beyondpesticides.org/assets/Pesticides.Harming.Key.Species.PAY.Summer.2018-4.pdf



This image from The Humane Society[39] shows how rodenticide poisons travel through wildlife food webs.

Not only can anticoagulant rodenticides affect all wildlife, but the ability of the poison to travel through food webs is another pathway for human exposure as well.

Diphacinone is Toxic and Must Be Banned

Diphacinone is an ingredient in DITRAC Tracking Powder which is a common rodenticide handled by certified applicators.[40] This powder is applied indoors and can become airborne. Diphacinone is highly toxic as an inhalant.[41] A drafty closet can easily blow the powder into a bedroom or hallway. Notably, low-income individuals are more exposed to toxins over the years because they often reside in poor housing conditions that require frequent pest treatment.[42] The populations that experience these chronic exposures are often society's most vulnerable, including racial and ethnic minorities and disabled individuals.

[39] https://www.humanesociety.org/news/modern-day-ddt
[40] https://www.belllabs.com/bell-labs/product/us/pest-control/ditrac-tracking-powder
[41] http://npic.orst.edu/factsheets/rodenticides.html
[42] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-13057-4

Diphacinone is the most frequently detected FGAR in non-target wildlife, threatening a wide range of birds and mammals including owls, bobcats, coyotes, and even bears.[43]

Not only can it be lethal to wildlife that hunts rodents, but it can also cause debilitating diseases like severe skin diseases like mange, decreased immune system response, and even spontaneous bleeding.[44]

In a 16-year study, diphacinone was found in 40% of bobcats in Los Angeles.[45] National Park Service research shows SGARs and FGARs in 39 out of 40 mountain lions tested in the Santa Monica Mountains. Rodenticide poisoning is so bad that four unborn kittens of a pregnant mountain lion tested positive for SGARs and FGARs, including diphacinone in 2022. Another female mountain lion died in 2022 of severe mange with 5 anticoagulant rodenticides including diphacinone in her liver.[46]

Rodenticides as a whole are toxic to humans; common symptoms of rodenticide poisoning include nausea, vomiting, internal bleeding, altered state of consciousness and alertness, dehydration, headache, pain, and seizures, and extreme cases of exposure can lead to kidney failure, liver disease, and even death.[47,48]

Diphacinone, as a FGAR, reduces the ability of one's blood to clot. This means that humans exposed to diphacinone are susceptible to bleeding of the nose, skin, and mucous membranes, bleeding of the digestive tract, bleeding into the kidneys, and bleeding into other organs.[49]

Ban FGARs: Warfarin and Chlorophacinone

Warfarin is a blood thinner and increases the risk of severe or fatal bleeding, especially in adults over 65 or with medical conditions.[50]

Chlorophacinone is highly toxic when ingested or absorbed through the skin with a lethal dose for humans is less than 7 drops.[51]

Ban SGARs: Brodifacoum, Bromadiolone, Difethialone, Difenacoum

Brodifacoum is highly toxic with a half-life of more than a year, meaning it can persist in the environment and poison larger animals through secondary poisonings.[52]

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[43] https://www.crescentavalleyweekly.com/viewpoints/04/20/2023/news-from-sacramento-23/
[44] https://www.raptorsarethesolution.org/wp-content/uploads/2022/09/2022-09-28-Final-Press-Release-
[45] https://www.researchgate.net/publication/272844423_Anticoagulant_rodenticides
[46] https://www.nps.gov/samo/learn/news/adult-female-mountain-lion-p-54-and-her-four-full-term-fetuses-
[47] https://www.ncbi.nlm.nih.gov/books/NBK554428/
[48] https://www.verywellhealth.com/rat-poison-first-aid-1298860
[49] https://nj.gov/health/eoh/rtkweb/documents/fs/0794.pdf
[50] https://medlineplus.gov/druginfo/meds/a682277.html
[51] https://cameochemicals.noaa.gov/chemical/4918
[52] https://www.cdpr.ca.gov/docs/registration/reevaluation/2018_investigation_anticoagulant.pdf

Used indoors and outdoors, bromadiolone is highly toxic and banned in 30 countries.[53] Bromadiolone poisonings can cause death by internal bleeding because its high lipid solubility permits it to diffuse across the blood-brain barrier and damage the central nervous system.[54]

Difethialone and difenacoum are highly toxic and can cause hemorrhages, muscle weakness, dyspnea, coughing, and swollen joints.[55,56]

Ban Bromethalin

Bromethalin damages the central nervous system,[57] with symptoms generally present after 1 to 2 days, making it hard to determine the cause of illness. Bromethalin intoxication syndrome[58] can cause tremors, hyperaesthesia, hyperthermia, and seizures.

Ban Strychnine

High levels of exposure to strychnine interfere with the nervous system and cause respiratory failure, muscle spasms, loss of consciousness, and brain death within 15-30 minutes.[59,60]

Poison for Pests is Poison for Humans

Regarding human health, the American Association of Poison Control Centers reported that yearly poisonings from second-generation anticoagulant rodenticides cause numerous health consequences. In 2018, there were more than 4,226 exposures with the majority of them occurring with young children and toddlers. It is important to recognize that humans and animals can be exposed to rodenticides[61] on a daily basis, even if these poisons are in the deepest corners of the home.

In addition to human health implications, pets and wildlife are susceptible to primary and secondary poisonings. Secondary poisonings are problematic because rodenticides poison larger animals that would not normally eat rodent bait. Rodenticides can bioaccumulate in the environment in small mammals, like mice or rats, and later poison animals higher in the food chain. For example, the Massachusetts government reported that a young bald eagle died after a secondary poisoning in 2021.[62] Even more troubling, veterinarians have trouble treating these incidents due to the nature of rodenticides. Poisonings from rat bait often have

[53] http://npic.orst.edu/factsheets/bromadgen.html
[54] https://www.google.com/url?q=https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5587214
[55] https://www.sciencedirect.com/topics/pharmacology-toxicology-and-pharmaceutical-science/difethialone
[56] https://inchem.org/documents/hsg/hsg/hsg095.htm
[57] https://www.aspca.org/news/poison-alert-beware-bromethalin
[58] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3659449/
[59] https://emergency.cdc.gov/agent/strychnine/basics/facts.asp
[60] https://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750018.html#
[61] http://npic.orst.edu/factsheets/rodenticides.html
[62] https://www.mass.gov/news/eaglet-dies-from-rodenticide-poisoning

delayed symptoms, making it difficult for vets to determine the cause of illness.

Use Alternatives to Protect Our Wildlife

The organization Poison Free Malibu has worked with their municipal government to successfully stop the use of anticoagulant rodenticides in their community due to the impact on local wildlife populations, including bobcats, coyotes, and mountain lions.[63] The city government implemented natural controls to reduce the rodent population by mandating things like locking dumpsters and replacing warped and defective lids. The efforts in Malibu and other communities near the Santa Monica mountains prove that rodent infestations can be controlled in urban areas without the use of unsafe chemicals.

Ban Rodenticides

CleanEarth4Kids.org calls on California to permanently ban all FGARs (diphacinone, warfarin, chlorophacinone) and SGARs (brodifacoum, bromadiolone, difethialone, and difenacoum) along with strychnine to protect wildlife, biodiversity, and human health. A complete ban is necessary in order to avoid even more harmful alternatives that will continue to poison wildlife.

Rodenticides are counterproductive to rodent control as they poison and kill natural predators. Scientific research and state studies have found rodenticides in over 75% of animals tested.[64]

It is critical that California adopts a cautious approach when considering mitigation measures because rodenticides are often administered incorrectly which threatens the health of people and wildlife in the surrounding areas. A study from UCLA[65] stated that individuals administering rodenticides often do not read the labels or adhere to safety guidelines. California must ensure this state's most vulnerable populations and wildlife are protected.

The US Allows Toxic Pesticides Banned in Other Countries

The US only bans 21 pesticides, while China and the EU ban 54 pesticides and the EU bans 195 pesticides. For a list of pesticides banned in other countries, please click here.[66] Legal does not mean safe!

The EPA downplays pesticide toxicity. In 2020, the EPA decided on 1,3-D (dichloro propene) that downgraded the pesticide's cancer rating from "likely to be a carcinogen" to "suggestive evidence of carcinogenic potential," despite their studies as well as independent studies confirming the presence of tumors and lesions in animal

[63] https://poisonfreemalibu.org/about/
[64] https://slconservancy.org/phase-out-rodenticides-and-how-integrated-pest-management-can-help
[65] https://digitalcommons.lmu.edu/cgi/viewcontent.cgi?article=1100&context=cate
[66] https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/

studies.[67,68] Dichloropropene was initially listed as a probable carcinogen in 1985, and this finding was established in 1989 and again in 2005.[69] Despite this, the categorization is still in place, downplaying the harm to human health and the environment.

Farmworkers are especially vulnerable, as the United States uses about 40-50 million pounds of 1,3-D each year, making it the 4th most used pesticide in our country's agricultural sector. Some farmworkers are 14 times more likely to be exposed by air to 1,3-D due to the DPR allowing for a push to change the tolerance threshold.[70] We must protect our farmworkers and ensure their health status does not become vulnerable due to their working conditions.

This carcinogenic categorization downgrade of 1,3-D represents how little the EPA is required to show concern and make changes to improve the risks to human health and the environment. The only factors that should be considered are the scientifically proven dangers to health and wildlife, not what the pesticide companies want or believe to be true.[71]

"The EPA's pesticide office has sunk to a despicable new low in allowing farmworkers, small children, and the environment to be sacrificial pawns in the profit schemes of its friends in the pesticide industry," said Nathan Donley, a senior scientist at the Center for Biological Diversity. "In rushing to reapprove these deadly chemicals, it's ignored its own scientists and independent researchers, refused to protect human health and the environment, and shown itself to be the panting lapdog of a morally bankrupt industry."[72]

For information on how the pesticide industry ensures their products are approved without proper testing, we encourage you to review the article "How Pesticide Companies Corrupted the EPA and Poisoned America." [73] Sen. Richard Blumenthal, D-Conn., is quoted in the article: "These findings are profoundly alarming and point to a troubling pattern of disregard at the EPA's Office of Pesticide Programs." Pesticide companies often sit on panels, committees, and working groups to "advise" regulators and have ensured the EPA relies almost entirely on industry-funded studies.[74] There is a 10-part series in The Intercept on how the EPA is failing to evaluate and test pesticides and chemicals due to industry interference.[75] For example, the EPA's pesticide office approved 89% of 972 industry requests to waive toxicity tests between 2011 and 2018.[76]

[67] https://public-inspection.federalregister.gov/2020-23503.pdf
[68] https://www.epa.gov/sites/default/files/2014-09/documents/health_effects
[69] https://oag.ca.gov/system/files/attachments/press-docs
[70] https://www.pesticidereform.org/wp-content/uploads/2023/01/13-D-Report-Jan_2023-FINAL.pdf
[71] https://pubmed.ncbi.nlm.nih.gov/33528302/
[72] https://biologicaldiversity.org/w/news/press-releases/epa-reapproves-dozens-ultra-toxic-pesticides-2020
[73] https://theintercept.com/2021/06/30/epa-pesticides-exposure-opp/
[74] https://www.panna.org/gmos-pesticides-profit/corporate-science-spin
[75] https://theintercept.com/2021/07/02/epa-chemical-safety-corruption-whistleblowers/
[76] https://theintercept.com/2021/06/30/epa-pesticides-exposure-opp/

We must do everything possible to protect children, public health, and our environment! It is vital to transition to non-toxic pest control methods that are organic, regenerative organic, and permaculture. We must stop using synthetic pesticides and fertilizers, most of which contain fossil fuels and toxic chemicals.

We Need Policies and Laws to Stop Synthetic Pesticides

Pesticides are dangerous to animal and human health and cause acute and long-term effects from exposure through dermal and oral pathways, inhalation, and the eyes.[77] Long-term effects of pesticides can take years to manifest after exposure. Allergic reactions can also occur in humans. Acute and long-term impacts usually impact the reproductive, central nervous, and endocrine systems. For example, DDT damages the reproductive, nervous, endocrine, and immune systems.[78]

The long-term health consequences are especially concerning since the sources of exposure are hard to identify, and illnesses are difficult to reverse, especially lymphoma, leukemia, breast cancer, asthma, and immune system disorders.[79]

Like adult farmworkers, child farmworkers are exposed to multiple synthetic pesticides.[80] These children, both working on farms, or those living close by, become particularly vulnerable, due to artificial pesticide exposure, to health outcomes such as respiratory and thyroid issues, cancer, and neurological disorders.[81] This could inherently lead to long-term harm to their health status.

Broadly, synthetic pesticides can threaten human and habitat health by leading to pesticide resistance. Unlike natural pesticide strategies, insects can become resistant to synthetic pesticides, leading companies to create more toxic pesticides or communities to apply more in their local environments. Currently, 500 species of insects and mites are resistant to one or more pesticides.[82] Additionally, pesticides can persist in the soil and water for years, poisoning environments and can biomagnify the food chain, threatening the quality of the food supply. Pesticides can also threaten the food supply through residues on produce.[83] In the U.S., the EPA measures and limits the number of pesticides on food after the passage of the Food Quality Protection Act (1996).[84] However, lower-income countries perform different investigations. The lack of regulation in these countries hurts the global environment, worsens pesticide resistance, and disproportionately threatens the quality of imported food.

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[77] https://extension.psu.edu/potential-health-effects-of-pesticides
[78] http://www.bt.ucsd.edu/synthetic_pesticide.html
[79] https://www.pesticidereform.org/pesticides-human-health/
[80] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8819502/
[81] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7035203/
[82] https://www.canr.msu.edu/grapes/integrated_pest_management/how-pesticide-resistance-develops
[83] https://www.healthline.com/nutrition/pesticides-and-health#regulation
[84] https://www.consumerreports.org/cro/health/natural-health/pesticides/index.htm#:~:text=There%27s%

The US is using toxic pesticides banned in many other countries.[85] Legal does not mean safe! We must do everything possible to protect children, public health, and our environment. Transitioning to non-toxic methods like organic, regenerative organic, and permaculture is vital. 99% of synthetic pesticides and fertilizers come from fossil fuels, and the continued use of these petrochemicals is a direct threat to the climate and our world.[86]

Regenerative and organic agricultural practices have shown poisons like neonicotinoid pesticides are not necessary.[87] Many cultural, mechanical, and biological solutions can be used for effective pest control in our homes, parks, and farms.[88]

Ban Glyphosate (RoundUp)

Glyphosate is listed under California's Prop 65 as a carcinogen (causes cancer) and it is a liability issue.[89]

More links below about the harm of glyphosate.

a. Gateway on Pesticide Hazards and Safe Pest Management — Beyond Pesticides
b. Glyphosate Listed Effective July 7, 2017, as Known to the State of California to Cause Cancer - OEHHA
c. Exposure to glyphosate-based herbicides and risk for non-Hodgkin lymphoma: A meta-analysis and supporting evidence - ScienceDirect
d. Multiomics reveal non-alcoholic fatty liver disease in rats following chronic exposure to an ultra-low dose of Roundup herbicide | Scientific Reports (nature.com)
e. Health dangers of glyphosate video
f. Glyphosate infiltrates the brain and increases pro-inflammatory cytokine TNFα: implications for neurodegenerative disorders | Journal of Neuroinflammation | Full Text (biomedcentral.com). Glyphosate crosses the blood brain barrier, increasing the risk of neurological diseases. Glyphosate can go into the brain and change the levels of two key molecules: TNF-α and Amyloid-β.
"Elevated TNF-α is a key indicator of inflammation in the brain, which plays a role in many neurological diseases. Soluble Amyloid-β is responsible for plaques, a classic hallmark of Alzheimer's. Both are elevated after exposure to glyphosate." - EWG

[85] https://biologicaldiversity.org/w/news/press-releases/united-states-uses-85
[86] https://www.ciel.org/reports/fossil-fertilizers/
[87] https://cleanearth4kids.org/farming-regenerative
[88] https://cleanearth4kids.org/stop-pesticides#
[89] https://www.p65warnings.ca.gov/fact-sheets/glyphosate

g. Court rejects Trump-era EPA finding that Roundup weed killer is safe | PBS NewsHour
h. Monsanto's Big Lie About Roundup and the System That Enabled It | Sierra Club
i. What the Monsanto Papers tell us about corporate science | Corporate Europe Observatory
j. The Monsanto Papers: Poisoning the scientific well | PubMed/NIH

Ban Organophosphates

Organophosphates (OP) are chemical substances produced by the process of esterification between phosphoric acid and alcohol.[90] OPs cause harm to insects, humans, plants, and animals and are commonly found in insecticides. Organophosphates are found in most insecticides and are used for mosquito spraying.[91] Currently, the United States registers thirty-six organophosphates to be used in homes, for agriculture, and even veterinary practices.[92]

Organophosphate residue is commonly found on crops such as lettuce.[93] Most Americans have one or more pesticides in their bodies, and organophosphates cause cancer, putting everyone at risk.[94] Organophosphates are believed to cause childhood cancers and breast cancer.[95,96] When pregnant women come in contact with organophosphates, their unborn babies have an increased chance of developing neurological disorders and experiencing congenital disabilities.[97]

Children are especially vulnerable to organophosphate poisoning, with 77,000 babies each day exposed to high levels of organophosphates in baby foods such as apple sauce, peaches, and pears.[98] Organophosphates can also cause increased urination, vomiting, memory loss, breathing difficulty, headaches, sweating, cancer, and seizures.[99] Wildlife and domesticated animals can be exposed to organophosphates, causing nausea, vomiting, diarrhea, and trouble breathing.[100] Humans and animals can be poisoned by ingestion, dermal contact, and inhalation.[101] In the past ten years, the EPA has banned the use of two types of organophosphates for residential use: parathion and diazinon.[102] Organophosphates are toxic and highly harmful to humans and wildlife alike.

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[90] https://www.ncbi.nlm.nih.gov/books/NBK499860/
[91] https://www.cdc.gov/biomonitoring/OP-DPM_FactSheet.html
[92] https://www.epa.gov/sites/default/files/documents/rmpp_6thed_ch5_organophosphates.pdf
[93] https://www.ewg.org/research/overexposed-organophosphate-insecticides-childrens-food
[94] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5734986/#R1
[95] https://www.cdc.gov/nceh/clusters/fallon/organophosfaq.htm
[96] https://www.mdpi.com/1660-4601/17/14/5030
[97] https://earthjustice.org/feature/organophosphate-pesticides-united-states
[98] https://www.ewg.org/research/overexposed-organophosphate-insecticides-childrens-food
[99] https://www.medicalnewstoday.com/articles/320350#symptoms
[100] https://cwhl.vet.cornell.edu/disease/organophosphate-toxicity
[101] https://www.ncbi.nlm.nih.gov/books/NBK470430/
[102] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7399930/

Chlorpyrifos is an organophosphate that harms human health and the environment.[103] Children and farmworkers are the most vulnerable, with even small amounts of chlorpyrifos being toxic.[104] The EPA banned the use of chlorpyrifos on any food sold in the United States in 2022, and it has been banned from residential use for over two decades.[105] That is the only organophosphate pesticide that the EPA has banned. All organophosphates must be denied as a class due to their harm to human health and the environment. Over a dozen organophosphates are used in food in the United States, even though they are very toxic and can cause learning disabilities and other neurodevelopmental harm to children.[106]

Ban Neonicotinoid Pesticides

CleanEarth4Kids.org calls for the ban of neonicotinoid pesticides in the United States of America, including neonicotinoid-treated seeds. Recognizing the harm to health, pollinators, wildlife, aquatic life, water, and the environment, as well as realizing the economic and social cost of neonicotinoid pesticides, the European Union (EU) has banned all outdoor uses of neonicotinoid pesticides, including treated seeds.[107,108]

Neonicotinoid pesticides are a threat to public health,[109] children's health,[110] brain development,[111], and learning ability, and neonicotinoids harm our water,[112] aquatic life,[113] wildlife, earthworms,[114] soil,[115] bees, and other pollinators vital for ecosystems, biodiversity, food sources, crops, and our economy in California. Neonicotinoid pesticides must be banned.

Neonicotinoid pesticides are endocrine disruptors[116] and can cause reproductive effects[117] like low birth weight, preterm birth,[118] and loss of pregnancy.[119] A study stated neonicotinoid pesticides "...can pose a risk to the integrity and functioning of the nervous system of different species of mammals, including humans."[120] Neonicotinoid pesticides are linked to developmental/neurological problems and increased risk of Type 1 diabetes.[121,122]

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[103] https://pubmed.ncbi.nlm.nih.gov/33059141/
[104] https://earthjustice.org/press/2022/voices-across-the-u-s-demand-ban-on-brain-harming-pesticide
[105] https://www.nrdc.org/bio/jennifer-sass/epa-bans-chlorpyrifos-food-crops
[106] https://earthjustice.org/action/ban-organophosphates
[107] https://friendsoftheearth.eu/news/eu-bans-bee-killing-neonic-pesticides/
[108] https://curia.europa.eu/juris/document/document.jsf?text=&docid=269405&pageIndex=0&doclang=
[109] https://www.sciencedirect.com/science/article/pii/S0160412022001271
[110] https://www.regulations.gov/document/EPA-HQ-OPP-2012-0329-0102
[111] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3290564/
[112] https://www.sciencedirect.com/science/article/pii/S0160412014003183
[113] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8431157/
[114] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7071835/
[115] https://www.cebc.cnrs.fr/wp-content/uploads/publipdf/2021/PAEE305_2021.pdf
[116] https://academic.oup.com/humupd/article/18/3/284/610048
[117] https://academic.oup.com/occmed/article/56/8/521/1465431
[118] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3279127
[119] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0219208
[120] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395098
[121] https://ehp.niehs.nih.gov/doi/10.1289/EHP515
[122] https://pubmed.ncbi.nlm.nih.gov/35902493

Neonicotinoid pesticides are a threat to children's health, even at low doses.[123] Research shows that once ingested, they can accumulate in children's cerebrospinal fluid, plasma, and urine.[124] A recent study done among 71 pregnant women in California, Georgia, Illinois, New Hampshire, New York, and Puerto Rico found neonicotinoids in 95% of the study participants.[125]

Neonicotinoid pesticides are also toxic[126] to bees,[127] insects, birds,[128] bats,[129] and other pollinators. A single neonicotinoid-treated seed is enough to kill a songbird.[130] Neonicotinoids also poison bats through their food supply and negatively impact echolocation. Neonicotinoid pesticides have been the leading cause of harm to pollinators over the past 20 years, which is a direct threat to agriculture.[131] The decline of bee populations puts the over $15 billion California agricultural sector at risk.[132] With the loss of pollinators, more than $11 billion in California's agricultural production is threatened.

Neonicotinoid pesticides quickly get into our water and can last for years in soil, contaminating the environment.[133] As one study put it: "Neonics are persistent in the environment: They have been found in soil, dust, wetlands, groundwater, nontarget plants and vertebrate prey, and foods common to the American diet, including wild and aquacultured marine species."[134] Research shows half the US population over three years old are exposed to neonicotinoids regularly.[135]

Neonicotinoids are systemic, in every part of a plant, from root to leaf to pollen to seeds, making the whole plant poisonous to insects. This poison is water-resistant and cannot be washed off.[136] 95% or more of the active ingredient in neonics stay in the soil for years, spreading via rain and irrigation to pollute soil, water, and even other plants.[137]

The neonicotinoid pesticide imidacloprid is banned in 29 countries but is commonly used in parks, schools, golf courses, homes, and farms in the United States.[138] Imidacloprid, like other neonicotinoid pesticides, drifts to surrounding areas.[139] According to the EPA, nearly 80% of all endangered species are likely to be harmed

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[123] https://www.regulations.gov/document/EPA-HQ-OPP-2012-0329-0102
[124] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00821-z
[125] https://pubs.acs.org/doi/10.1021/acs.est.1c08942
[126] https://link.springer.com/article/10.1007/s11356-017-0341-3
[127] https://xerces.org/sites/default/files/2018-05/16-022_01_XercesSoc_How-Neonicotinoids-Can-Kill-Bees_web
[128] https://ocm.auburn.edu/newsroom/news_articles/2020/10/141359-miao-bird-study.php
[129] https://cwf-fcf.org/en/resources/research-papers/BatNeonicsReport_en.pdf
[130] https://abcbirds.org/neonics
[131] https://www.theguardian.com/environment/2020/jul/29/bees-food-crops-shortage-study
[132] https://www.nrdc.org/experts/daniel-raichel/neonic-pesticides-could-spell-disaster-our-food-supply
[133] https://www.sciencedirect.com/science/article/abs/pii/S0048969717324397
[134] https://ehp.niehs.nih.gov/doi/10.1289/ehp515
[135] https://www.sciencedirect.com/science/article/abs/pii/S0013935119303524
[136] https://xerces.org/systemic-insecticides-reference-and-overview
[137] https://www.nrdc.org/bio/daniel-raichel/california-must-regulate-toxic-neonic-coated-crop-seeds
[138] https://pan-international.org/pan-international-consolidated-list-of-banned-pesticides/
[139] https://www.epa.gov/sites/default/files/2020-01/documents/imidacloprid_pid_signed_1.22.2020.pdf

by imidacloprid, and the critical habitats of 658 species are likely to be impacted.[140]

Neonicotinoid pesticides are toxic to all aquatic life with long-term effects on the marine environment.[141] The California Department of Pesticide Regulation (DPR) has detected neonicotinoid pesticides in 92% of urban water samples in southern California,[142] 58% in urban areas of northern California,[143] and 94% in agricultural areas.[144]

Neonicotinoid pesticides are in our water, soil, and food. Neonicotinoid residue is found on most fruits and vegetables in the US.[145] Unlike many other pesticides, neonicotinoids cannot be washed off of food before eating.[146] According to the FDA, over half of our food has the residue of at least one pesticide, with 10% having levels above legal limits.[147] 90% of Americans have detectable pesticide levels.[148]

Neonicotinoid pesticides can also impact children's brain development, especially during the prenatal period. Exposure could affect various emotional, motor, and neurological functions.[149] Of a group of children (ages 3-18), nearly 93% of the collected plasma and 64% of the collected cerebrospinal fluid samples contained at least one neonicotinoid.[150]

Additionally, there are reported links between neonic exposures and malformations of the developing heart and brain, as well as a cluster of symptoms, including memory loss and finger tremors.[151]

Pollinators across the US are on the edge of extinction.[152] This is an immediate threat to the environment and biological diversity, and a direct threat to agriculture.[153] Pollinators are "responsible for helping 90% of the world's flowering plants reproduce" and nearly 75% of food crops, as recognized by the EPA and FAO.[154,155]

Pollinators play a critical role in maintaining ecosystem health, food supplies, and the economy.[156] In the United States alone, honey bees and other pollinators contribute approximately $200 billion annually in ecological services by facilitating

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[140] https://www.epa.gov/endangered-species/draft-national-level-listed-species-biological-evaluation-imidacloprid
[141] http://www.centerforfoodsafety.org/files/neonic-water-report-final-242016_web_33288.pdf
[142] https://www.cdpr.ca.gov/docs/emon/pubs/ehapreps/study_270_fy_17_18_mngt_rpt.pdf
[143] https://www.cdpr.ca.gov/docs/emon/pubs/ehapreps/report_299_fy17-18.pdf
[144] https://www.cdpr.ca.gov/docs/emon/pubs/ehapreps/study_304_ag_monitor_rpt_2018.pdf
[145] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-018-0441-7
[146] https://pubag.nal.usda.gov/catalog/4668856
[147] https://www.fda.gov/food/pesticides/pesticide-residue-monitoring-program-reports-and-data
[148] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5734986/#R1
[149] https://pubmed.ncbi.nlm.nih.gov/31520389/
[150] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00821-z
[151] https://ehp.niehs.nih.gov/doi/full/10.1289/EHP515
[152] https://grist.org/food/mass-extinction-threatens-the-worlds-pollinators-and-its-crops/
[153] https://www.theguardian.com/environment/2020/jul/29/bees-food-crops-shortage-study
[154] https://www.epa.gov/sciencematters/protecting-pollinators
[155] https://www.fao.org/pollination/background/bees-and-other-pollinators/en/
[156] https://www.nps.gov/subjects/pollinators/what-is-a-pollinator.htm

the reproduction of plants.[157] Pollinators are essential to the production of the fruits and vegetables that humans and other organisms in the food chain rely on for their sustenance.[158] Without these pollinators, our food supply would be severely limited.[159] Additionally, pollinators contribute to clean air, soil stabilization, and oxygen supplies, making them crucial for the overall health of our ecosystem.[160] Native bees are vital for pollination but are not the only pollinators. Other essential pollinators include native beetles, flies, butterflies, wasps, moths, and hummingbirds. These diverse groups of pollinators play a crucial role in maintaining the health and productivity of ecosystems, and the agricultural systems rely on them.

Importance of Pollinators

Pollinators around the world are on the edge of extinction. This is an immediate threat to the environment and biological diversity, and a direct threat to agriculture.[161] Pollinators are "responsible for helping 90% of the world's flowering plants reproduce" and nearly 75% of food crops, as recognized by the EPA and FAO.[162,163]

Pollinators play a critical role in maintaining ecosystem health, food supplies, and the economy.[164] In the United States alone, honey bees and other pollinators contribute approximately $200 billion annually in ecological services by facilitating the reproduction of plants.[165] Pollinators are essential to the production of the fruits and vegetables that humans and other organisms in the food chain rely on for their sustenance.[166] Without these pollinators, our food supply would be severely limited.[167] Additionally, pollinators contribute to clean air, soil stabilization, and oxygen supplies, making them crucial for the overall health of our ecosystem.[168] Native bees are vital for pollination but are not the only pollinators. Other essential pollinators include native beetles, flies, butterflies, wasps, moths, and hummingbirds. These diverse groups of pollinators play a crucial role in maintaining the health and productivity of ecosystems, and the agricultural systems rely on them.

Habitat Loss

Pollinator decline is primarily driven by the loss of their habitats, which are increasingly being replaced by artificial structures like roadways, non-native plants,

[157] https://www.farmers.gov/blog/value-birds-and-bees
[158] https://www.pollinator.org/pollinators#
[159] https://ento.psu.edu/research/centers/pollinators/resources-and-outreach/pollinators-101
[160] https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/
[161] https://www.theguardian.com/environment/2020/jul/29/bees-food-crops-shortage-study
[162] https://www.epa.gov/sciencematters/protecting-pollinators
[163] https://www.fao.org/pollination/background/bees-and-other-pollinators/en/
[164] https://www.nps.gov/subjects/pollinators/what-is-a-pollinator.htm
[165] https://www.farmers.gov/blog/value-birds-and-bees
[166] https://www.pollinator.org/pollinators#
[167] https://ento.psu.edu/research/centers/pollinators/resources-and-outreach/pollinators-101
[168] https://www.nwf.org/Educational-Resources/Understanding-Conservation/Ecosystem-Services

finely cut grass, and synthetic turf.[169] The effects of pesticides on biodiversity and habitat loss are seen all around the world. In North America, the conversion of land for human use alone has resulted in the significant loss of vital pollinator habitats.[170] In Germany, insect biomass has declined more than 70% in the last few decades, and the farmland bird populations in Europe have been halved.[171]

A 2019 study recognized chemical pollution, including pesticides, as the second leading driver for the worldwide decline in insect populations.[172] The intensification and industrialization of agriculture since the mid-20th century have led to crops occupying about 11% of the world's land surface, with active grazing taking an additional 30%. Large-scale farming, monoculture, pesticides, fertilizers, and the elimination of interspersed hedgerows and other wildlife habitat fragments have destroyed insects and biodiversity everywhere.[173]

Pollinators rely on their native habitats for food, reproduction, and safety.[174] Pollinator habitats must be protected!

Human Health

The social cost of pesticide use is estimated at $10 billion per year, but the harm to children, pregnant women, public health, and the losses of pollinators, birds, fish, insects, biodiversity, healthy soils, food production, and climate change can not be fully captured.[175] How could we put a price on a child's health and future?

Documented pesticide poisonings, shorter lifespans, and severe health problems of farmworkers are of significant concern.[176]

Neonicotinoids are neurotoxins that also harm children's developing brains.[177] Exposure to neonicotinoids at an early age alters/changes the correct "neuronal development," which means neonicotinoid pesticides harm the development of the brain.[178] The inability of neurons to properly migrate is one cause of neurological disorders.[179] Neonicotinoids decrease "neurogenesis," which means neonicotinoids harm the growth of brain tissue.[180] Neonicotinoids induce "neuroinflammation," which means neonic pesticides inflame the brain. Neonicotinoid pesticides harm

[169] https://www.fws.gov/initiative/pollinators/threats
[170] https://www.xerces.org/bumblebees/conservation-efforts
[171] https://www.frontiersin.org/articles/10.3389/fenvs.2019.00177/full
[172] https://www.sciencedirect.com/science/article/abs/pii/S0006320718313636
[173] https://www.pnas.org/doi/10.1073/pnas.2002548117
[174] https://foe.org/blog/reasons-why-bees-are-dying/
[175] https://www.beyondpesticides.org/assets/media/documents/documents/pimentel.pesticides.2005update.pdf
[176] https://www.farmworkerjustice.org/2013/07/Exposed-and-Ignored-by-Farmworker-Justice-email-version.pdf
[177] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395098
[178] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1247187
[179] https://medcraveonline.com/FRCIJ/pesticides-induced-carcinogenic-amp-neurotoxic-effect-on-human.html
[180] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8395098

children's health even at low doses.[181] Children are more susceptible to the effects of environmental toxins because they are still developing.

Children of color are more likely to be exposed to pesticides, making them not just more susceptible but more vulnerable to harm.[182] These children, for example, those of Latin American and Caribbean communities, have been found to have been exposed to these pesticides and experience some adverse health effects.[183]

Pesticide drift settles on playgrounds, porches, laundry, toys, pools, furniture, gardens, and lawns where people and children live, learn, and play.[184] This exposes people, pollinators, and wildlife to danger from what they touch, breathe, and eat.

The proximity to agricultural pesticides is essential because pesticides can drift miles, harming children and families living near agricultural fields.[185,186]

Children who work in agriculture are routinely exposed to neonics and other toxic pesticides.[187] As such, it is morally bankrupt to allow child agricultural workers. Documented pesticide poisonings, shorter lifespans, and severe health problems of farmworkers are of significant concern.[188]

Ban Dicamba

Dicamba is an organophosphate that is highly volatile and can quickly become airborne.[189] Dicamba is found in over 1,000 different herbicide products in the United States. It is commonly used to selectively control broadleaf weeds in corn, soy, and other crops.[190]

Organophosphates (OP) are chemical substances produced by the process of esterification between phosphoric acid and alcohol.[191] These chemicals are harmful to insects, humans, plants, and animals and are commonly found in many insecticides.[192] Organophosphates are found in most insecticides and are frequently used for mosquito control.[193] In the United States, thirty-six organophosphates are approved to be used in homes, agriculture, and veterinary practices.[194]

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[181] https://www.regulations.gov/document/EPA-HQ-OPP-2012-0329-0102
[182] https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-022-13057-4
[183] https://pubmed.ncbi.nlm.nih.gov/36173136/
[184] https://www.epa.gov/reducing-pesticide-drift/introduction-pesticide-drift
[185] https://europepmc.org/article/AGR/IND20460440
[186] https://pubmed.ncbi.nlm.nih.gov/11097803/
[187] https://www.aft.org/community/child-labor-united-states
[188] https://www.farmworkerjustice.org/wp-content/uploads/2013/07/Exposed-and-Ignored-by-Farmworker
[189] https://www.centerforfoodsafety.org/issues/6459/pesticides/dicamba
[190] https://www.mda.state.mn.us/dicamba#:~:text=DicambaselectiveherbicidecropsMinnesota.
[191] https://www.ncbi.nlm.nih.gov/books/NBK499860/
[192] https://www.dcceew.gov.au/environment/protection/npi/substances/fact-sheets/phosphoric-acid#:~
[193] https://www.cdc.gov/biomonitoring/OP-DPM_FactSheet.html
[194] https://www.epa.gov/sites/default/files/documents/rmpp_6thed_ch5_organophosphates.pdf

Organophosphate residue is commonly found on crops such as lettuce, peaches, and apples.[195] Many Americans have at least one or more pesticide agents in their bodies. Multiple organophosphates are carcinogenic to humans and animals, and many more still need to be adequately tested.[196]

Organophosphates are believed to contribute significantly to childhood cancers and breast cancer.[197,198] If pregnant women come in contact with organophosphates, their unborn babies have a risk of developing neurological disorders and congenital disabilities.[199] Children are at a higher risk for organophosphate poisoning; 77,000 babies each day are exposed to high levels of organophosphates in baby food such as apple sauce, peaches, and pears.[200] The smaller size of children compounded with less-developed immune and nervous systems creates a more serious health risk than adults.[201]

Organophosphates can also cause increased urination, vomiting, memory loss, breathing difficulty, headaches, sweating, and seizures.[202] Both wildlife and domesticated animals are at risk of exposure to organophosphates; OP exposure in animals can cause experiences of nausea, vomiting, diarrhea, and trouble breathing.[203] Humans and animals can be poisoned by ingestion, dermal contact, and inhalation.[204] In the past ten years, the EPA has only banned the use of two types of organophosphates – parathion and diazinon – for residential use.[205]

A 2020 epidemiological study followed nearly 50,000 pesticide applicators in Iowa and North Carolina for over two decades, with over half of the applicators using dicamba. This study proved a relation between high dicamba exposure and increased risk of cancer, especially leukemia, liver cancer, and intrahepatic bile duct cancer.[206] Dicamba can alter liver function in ways that promote liver cancer and tumors in combination with other carcinogens.[207,208] Additionally, dicamba was found to cause DNA mutations[209] and induce oxidative stress[210] through DNA damage, which are both conditions that can cause cancer.[211] Oxidative stress has also been linked to neurodegenerative disease, cardiovascular disease, diabetes mellitus, and many other

[195] https://www.ewg.org/research/overexposed-organophosphate-insecticides-childrens-food
[196] https://monographs.iarc.who.int/wp-content/uploads/2018/07/mono112.pdf
[197] https://www.cdc.gov/nceh/clusters/fallon/organophosfaq.htm#:~:text=Some%20studies%20in%20adults
[198] https://www.mdpi.com/1660-4601/17/14/5030
[199] https://earthjustice.org/feature/organophosphate-pesticides-united-states
[200] https://www.supermarketnews.com/archive/study-baby-food-has-unsafe-pesticide-levels
[201] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6982419/#:~:text=Infants%20and%20children%20are
[202] https://www.medicalnewstoday.com/articles/320350#symptoms
[203] https://cwhl.vet.cornell.edu/disease/organophosphate-toxicity
[204] https://www.ncbi.nlm.nih.gov/books/NBK470430/Organophosphatepesticideexposure
[205] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7399930/
[206] https://academic.oup.com/ije/article/49/4/1326/5827818
[207] https://pubmed.ncbi.nlm.nih.gov/7657066/
[208] https://pubmed.ncbi.nlm.nih.gov/9863012/
[209] https://pubmed.ncbi.nlm.nih.gov/18676083/
[210] https://pubmed.ncbi.nlm.nih.gov/16828255/
[211] https://www.sciencedirect.com/science/article/pii/S1535610820302749

pathologies.[212] The reckless decisions made by the EPA and state government agencies concerning dicamba need to come to an end.[213] It must be banned to protect human, plant, and animal species from harmful dicamba exposure.

2,4-D is a Toxic Herbicide

2,4-D is in the phenoxy class of chemicals and is classified as a herbicide.[214] This herbicide alters plant cells which ends up killing them.[215] 2,4-D is widely used and is one of two ingredients in Agent Orange, a dangerous chemical mixture used by the military on forests during the Vietnam War, which has been shown to cause many types of cancer and other serious health issues like Parkinson's disease, hypothyroidism, type 2 diabetes, and ischemic heart disease.[216,217]

There has been a 67% increase in the amount of 2,4-D that has been applied in agriculture in the past ten years, which has dramatically increased exposure rates.[218] 1 in 3 Americans have detectable concentrations of 2,4-D in their bodies.[219] This toxic herbicide is linked to cancer, endocrine disruption, reproductive effects, neurotoxicity, kidney/liver damage, and birth/developmental effects and is harmful to birds, fish, and bees.[220] Children ages 6-11 are twice as likely to be harmed by 2,4-D due to various factors such as playing outside and increased sensitivity to chemical exposures. A recent study predicts that the exposure to 2,4-D will rise in vulnerable populations if we do not act now to ban this toxic herbicide.[221]

The International Agency for Research on Cancer (IARC) designated 2,4-D as possibly carcinogenic in 2015, despite the EPA claiming that it is not likely to be carcinogenic to humans.[222]

2,4-D and Dicamba Harm Pollinators

2,4-D is toxic to bees and can inhibit bees' ability to fly.[223] It can also cause heart contractions in honey bees.[224] 2,4-D indirectly harms pollinators by destroying their food sources and causing death by starvation.[225] Weeds are killed by 2,4-D, but they are a vital food source for pollinators, and they rely on them for survival.[226]

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[212] https://www.sciencedirect.com/science/article/pii/S2213231715000038
[213] https://biologicaldiversity.org/w/news/press-releases/national-institutes-health-study-links-dicamba
[214] https://www3.epa.gov/pesticides/chem_search/reg_actions/reregistration/fs_PC-030001_30-Jun-05.pdf
[215] https://www.oregon.gov/oha/PH/HEALTHYENVIRONMENTS/TRACKINGASSESSMENT/ENVIRO
[216] https://www.epa.gov/ingredients-used-pesticide-products/24-d
[217] https://www.va.gov/disability/eligibility/hazardous-materials-exposure/agent-orange/
[218] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00815-x
[219] https://beyondpesticides.org/dailynewsblog/2022/02/one-third-of-americans-have-hazardous-weed-killer
[220] https://www.beyondpesticides.org/resources/pesticide-gateway?pesticideid=1
[221] https://ehjournal.biomedcentral.com/articles/10.1186/s12940-021-00815-x
[222] https://www.iarc.who.int/wp-content/uploads/2018/07/pr236_E.pdf
[223] https://www.tandfonline.com/doi/pdf/10.1080/00288233.1964.10416414
[224] https://rachelcarsonlandmarkalliance.org/rcla-reporting/a-herb
[225] https://www.xerces.org/pesticides/understanding-pesticides
[226] https://www.oneearth.org/six-reasons-why-you-should-love-weeds/#:~:text=1.,crops%20wo

Dicamba causes plants to bloom less,[227] resulting in fewer visitations by pollinators. This can lead to issues with reproduction, navigation, and memory of pollinators and habitats, and exposure to pathogens and diseases.[228] Dicamba drifts can also damage natural areas and wildlife insects, including species that bees and other pollinators rely on for survival.[229]

Ban Pyrethroid Insecticides

Pyrethroid insecticides are toxic to pollinators.[230] Although pyrethroids are sprayed on crops and in the air to control mosquitos,[231] they are one of the main toxins that cause colony collapse disorder in bees.[232] Pyrethroids are also highly toxic to fish, especially in their juvenile stages.[233]

Exposure to pyrethroids can cause dizziness, headaches, muscle spasms, loss of consciousness, and convulsions.[234] Many pyrethroid insecticides are linked to autism, Alzheimer's, and Parkinson's diseases and are known to be highly toxic to pollinators and fish.[235] The only current protective mandate by the EPA is a 10- to 25-foot-wide buffer of permanent vegetation between fields sprayed with pesticides and any body of water. This is drastically smaller than its original recommendation for a 66-foot wide buffer.[236]

There have been other EPA decisions concerning pyrethroids that have lowered protections and mandates, despite the links between the harmful chemicals and subsequent learning disabilities and neurological diseases.[237] For instance, the agency decided to increase the amount of pyrethroid exposure considered safe for children threefold based on confidential pesticide-industry studies and a model developed by pyrethroid pesticide companies. Two separate scientific advisory panels with peer-reviewed, independent studies displayed contradictory evidence but were ignored by the EPA.[238,239]

Soils and Climate Change

Soil's vital functions sustain planetary, animal, and plant life. It also regulates water flow, filters and buffers pollutants, cycles nutrients, and provides physical stability

[227] https://setac.onlinelibrary.wiley.com/doi/10.1002/etc.3169
[228] https://pubmed.ncbi.nlm.nih.gov/26184786/
[229] https://biologicaldiversity.org/w/news/press-releases/farmers-conservationists-
[230] http://npic.orst.edu/factsheets/pyrethrins.html
[231] https://wwwn.cdc.gov/TSP/PHS/PHS.aspx?phsid=785&toxid=153
[232] https://www.sciencedaily.com/releases/2020/11/201124152820.htm#:~:text=Pyrethroids
[233] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8300353/
[234] https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=786&toxid=153
[235] https://www.regulations.gov/document/EPA-HQ-OPP-2008-0331-0176
[236] https://biologicaldiversity.org/w/news/press-releases/trump-epa-proposes-weaker-protections-toxic
[237] https://biologicaldiversity.org/w/news/press-releases/trump-administration-ends-long-standing-
[238] https://pubmed.ncbi.nlm.nih.gov/8240001/
[239] https://pubmed.ncbi.nlm.nih.gov/8184428/

and sort.[240] Soil is an essential ally in fighting the threats of climate change. Carbon sequestration has been a relatively natural way of removing carbon dioxide from the atmosphere with a less harmful impact on land, water, energy, and cost.[241] Currently, our soils remove about 25 percent of the world's fossil fuel emissions annually. Large-scale agricultural practices that disturb soil tillage,[242] mono-crop planting, crop residue removal,[243] excessive use of fertilizers and pesticides, along with overgrazing, expose the atmosphere to carbon found in soil; this carbon combines with oxygen, allowing it to burn into the atmosphere. An excess of carbon causes temperatures to increase, facilitating climate change.[244] Reducing the disturbances on managed lands by practicing no-till farming, harvesting forests less frequently, and leaving green space in urban areas can reduce carbon emissions from soils, ensuring that carbon is not released back into the atmosphere.[245]

Ban Synthetic Pesticides

We ask the City of Santa Rosa to ban the use of synthetic pesticides.

The decisions we make today affect our children's health and future.

Sincerely,

Suzanne M. Hume
S@CleanEarth4Kids.org
(760) 518-2776
CleanEarth4Kids.org

[240] https://www.nrcs.usda.gov/resources/education-and-teaching-materials/what-is-soil
[241] https://www.usgs.gov/faqs/what-carbon-sequestration
[242] https://crops.extension.iastate.edu/encyclopedia/frequent-tillage-and-its-impact-soil-quality
[243] https://cropwatch.unl.edu/2017/residue-removal-impacts-yield
[244] https://news.climate.columbia.edu/2018/02/21/can-soil-help-combat-climate-change/
[245] https://www.soils.org/files/sssa/iys/november-soils-overview.pdf

From: Rika Gopinath
To: Montoya, Michelle
Subject: [EXTERNAL] Public Comment to Climate Action Sub-Committee
Date: Wednesday, October 4, 2023 1:46:59 PM

Hello Chair Rogers and Members Rogers and Fleming,

My name is Rika Gopinath and I am Chair of YardSmartMarin and Co-Chair of the California chapter of NonToxic Communities. We support efforts to eliminate toxic chemicals to protect public health and the environment.

Purveyors of artificial turf pitch their products as an environmentally smart choice. A closer look at the facts shows this is not the case and artificial turf has a negative impact on efforts to combat climate change.

It is not surprising that fields of plastic would create heat islands, directly worsening climate change. Surface temperatures can be dangerously high, even leading to melted shoes and heat stroke. Artificial turf contributes to climate change in indirect ways as well.

Artificial turf is made of petroleum-based polyethylene plastic. This plastic is the most prolific emitter of methane (20 times more potent than carbon dioxide) and ethylene gases. These fields generate greenhouse gasses over the course of their useful lives (only 8-10 years) and for hundreds of years after they are dumped in landfills - an astonishing 40,000 lbs of synthetic waste per acre. Despite industry claims, artificial grass cannot be effectively recycled.

All of this plastic degrades into microplastics that contaminate our water, soil, and air. The plastic blades of grass and their backing contain dangerous chemicals such as PFAS and flame retardants. The infill material contains chemicals including known carcinogens plus heavy metals like lead.

The answer is to turn to organically managed real grass instead. Real grass sequesters carbon and cools the earth. And Santa Rosa can get funding, training, and support from Beyond Pesticides with their Parks for a Sustainable Future program. I am the North Bay contact and I am currently working with multiple Marin municipalities to apply for this program. I would be happy to talk with you about this opportunity as well.

Organic grass has come a long way in the past decade. Today, organically managed grass is more drought-tolerant, more-pest-resistant and healthier than conventionally managed grass. This is possible because organic land management systematically builds the health of the soil. When soil is healthy, purchasing chemical fertilizers and herbicides is not necessary and thus it is actually less expensive to manage grass

this way. And of course not using pesticides makes these fields a safer place to play.

I encourage you to pass a ban on artificial turf and pesticides, and turn to organic land management instead. Our children and our planet will thank you for making this choice.

Rika Gopinath
Chair, Yard Smart Marin
[redacted]
Pronouns: she/her
www.yardsmartmarin.org

From: Annie Stuart
To: Montoya, Michelle
Subject: [EXTERNAL] Ban plastic grass, stop using herbicides
Date: Wednesday, October 4, 2023 2:03:12 PM

Dear Santa Rosa City Council Members,

Most of us care deeply about the health of our children, environment, and climate.

If this describes you, ask yourself why it makes sense to continue to install plastic grass – an "invasive species" that **seriously harms all three**. Synthetic turf:

- Contains plastic, a petrochemical product, and recycled tires or other untested materials
- Releases microplastics and toxic chemicals – many that are linked to cancer – into our soil, water, and air, putting children at greatest risk
- Creates heat island effects – an increasing concern, given rising temperatures
- Requires ongoing maintenance costs for sanitation and disinfection
- Has a short "life," requiring regular replacement and increasing overall costs
- Is not recyclable in the U.S. and is therefore incinerated or landfilled at the end of its useful "life," contributing to our climate crisis and putting nearby communities at risk

Lead the way in Sonoma County.

First, ban installation of new plastic grass fields. With adequate funding for our parks, we *can* successfully maintain natural grass fields and address issues such as watering and injuries from gopher holes.

Second, stop using synthetic herbicides. According to the Pesticide Action Network, 99 percent of all synthetic chemicals, including pesticides, are derived from fossil fuels and can release greenhouse gas emissions after application. Additionally, their production, on average, requires 10 times more energy than that of nitrogen fertilizer.

With a rapidly accelerating climate crisis and myriad environmental challenges, we cannot afford short-term thinking. Please act on our behalf.

Annie Stuart,
[redacted]
Steering Committee Member

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Annie Stuart
Encore Editorial Services
[redacted]
www.encoredit.com

From: Yes
To: Montoya, Michelle
Subject: [EXTERNAL]
Date: Wednesday, October 4, 2023 2:58:09 PM

Using synthetic pesticides is unconscionable especially Round up that causes Lymphoma for those who apply it and the resulting environmental harm that results in their use. Also artificial grass kills the soil underneath rendering dead zones and it increases heat which we do not need in this time of excess high temperatures. Thoughts of saving money now will lead to damage that will cost Santa Rosa more in the future to mitigate the damage.
Thank you, Cyndi Houck, [redacted] Santa Rosa, 95405

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