

Update on Pesticides in Washington



Northwest Center for Alternatives to Pesticides

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Outline-A Public Health Check of Cannabis and Pesticides

- Who is NCAP
- What pesticides?
- How do pesticides impact public health?
- What's happening in Wa?
- Personal Research:
 - Research on pesticides and cannabis
 - Conclusions
- Discussion/Questions

Who is NCAP?

The Northwest Center for Alternatives to Pesticides (NCAP) works to protect community and environmental health and inspire the use of ecologically sound solutions to reduce the use of pesticides.



NCAP works to protect those who are most vulnerable from harm caused by pesticides, while also striving to educate and help identify healthier, more ecologically sound solutions to common pest issues. We focus our campaigns in three main areas:

- Healthy People and Communities
- Healthy Water and Wildlife
- Healthy Food and Farms



“If we are going to live so intimately with these chemicals eating and drinking them, taking them into the very marrow of our bones-we had better know something about their nature and their power.”

-Rachel Carson,
Silent Spring



What Are Pesticides?



What Are Pesticides?

Any agent that is designed specifically for or effectively used to kill an organism that is deemed a pest.

Herbicides, insecticides, rodenticide and fungicides are all pesticides.

Which ones are we concerned about?

Complex, synthesized chemical agents that represent a persistent toxic threat within a given ecosystem. (Conventional chemical pesticides - organophosphates, carbamates, organochlorines, pyrethroids.)

What Are Less Harmful Pesticides?

Botanical oils (Neem, Clove oil)

Citrus oils (Citric acid, Limonene)

Minerals (Iron Phosphate, DE)

Microbes/microorganisms (BT, nematodes)

Beneficial Insects/Animals (Ladybugs)

Vinegar

Use none-IPM plans

Third party for efficacy: OMRI.org

How do pesticides impact public health?



Pesticides are hazardous to human health

Common pesticide injuries include:

- nerve damage
- lung damage
- loss of reproductive abilities
- disruption of immune and endocrine systems
- birth defects
- cancer

(Landrigan, P.J. et al. 1999. Pesticides and inner-city children: Exposures, risks, and prevention. Environmental Health Perspective 107 (Suppl. 3): 431-437.)

Pesticides are hazardous to human health

Looking at just 27 of the most commonly used pesticides

(Ref. #2 [www.epa.gov/oppbead1/pestsales/01pestsales/usage 201 2.html#3_6](http://www.epa.gov/oppbead1/pestsales/01pestsales/usage%201%202.html#3_6))

- 15 are have been classified as carcinogens with their use totaling about 300 million pounds per year *(US EPA. 2004. Chemicals evaluated for carcinogenic potential. http://npic.orst.edu.chemicals_evaluated_July2004.pdf)*
- 15 damage genes with their use totaling 350 million pounds per year *(National Library of Medicine. 1991-1998. Genetic toxicology: GENE-TOX. <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?GENETOX>)*
- 8 cause pregnancy problems with their use totaling about 150 million pounds per year *(US EPA. Toxicity data by category for chemicals listed under EPCRA Section 313. http://www.epa.gov/tri/chemical/hazard_categories.pdf)*

PTA and School Health School Rule!



Advancing Solutions in Schools, Cities and Counties

Info on Pesticides & Alternatives

NCAP – www.pesticide.org

IPMopedia – www.ipmopedia.org

Safer Pest Control Project – www.spcpweb.org

OMRI-www.omri.org

Washington State Dept of Ag

Product use and emergencies

National Pesticide Information Center
800-858-7378
www.npic.orst.edu

Poison Control Center National Hotline 800-
222-1222
www.aapcc.org

Product Label

Cannabis and Pesticides

Megan Dunn
Personal Research

Mitigating Hazards

- Compared to other industries, Cannabis has a smaller ecological footprint (all local)
- Growing, processing, and retail-potential hazards to workers and the environment
- With careful regulation a robust industry can reduce exposure harmful toxics (including pesticide use, chemical and fertilizer use, mold, flammable products for extraction, sanitizing and cleaning products).

Who's watching?

Air quality and odor controls-Puget Sound Clean Air Agency and the Department of Ecology

Pesticide and fertilizer use -Washington State Department of Agriculture

Sanitary sewer discharge and septic system discharge -Waste Management programs

Plant waste (compostable and non-compostable)-Washington Department of Ecology and the county's local health jurisdiction



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- ▶ **Pesticide Management**
- ▶ **Pesticides**
- ▶ **Compliance Activities**
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- ▶ **Pesticide Storage**
- ▶ **Pesticide Registration**
- ▶ **Waste Pesticide Program**
- ▶ **Worker Protection**

Page updated/verified: Oct 28, 2016

Pesticide and Fertilizer Use on Marijuana in Washington

To view PDF files [download Acrobat Reader](#).

The agency responsible for licensing and regulating marijuana is the [Washington State Liquor and Cannabis Board](#) [external link].

If you have questions pertaining to medical marijuana that are not licensing related you need to contact the [Washington State Department of Health](#) [external link].

Pesticides*

To assist growers authorized by I-502 or I-692 who use pesticides for the production of marijuana in Washington, WSDA has developed a [list of pesticides](#) [PDF 220kB] that meet [WSDA Criteria](#) [PDF 120kB] for use on marijuana.

Inclusion on the list is not an endorsement or a recommendation regarding the use of any specific pesticide for the production of marijuana in Washington.

The list only includes registered pesticides that are allowable for use on marijuana as defined by the

Topics of Interest

[LCB-WSDA Bulletin No 16-01 Pesticide "Guardian" No Longer Allowed on Marijuana](#) [PDF 92kB]

[LCB-WSDA Bulletin No 16-02 Updated List of Pesticides Allowed for Use on Marijuana](#) [PDF 95kB]

[LCB-WSDA Bulletin LCB No 16-03 Sampling Results](#) [PDF 93kB]

[LCB-WSDA Bulletin No 16-04 Stop Sale Rescinded and Additional Sampling](#)

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Criteria for Pesticides Used for the Marijuana Production in Washington

1. Pesticides that require federal registration by the U.S. Environmental Protection Agency (EPA) under Section 3 of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA):

- Registration required
- Prior to planting (indoor or out), certain uses permitted

Criteria for Pesticides Used for the Marijuana Production in Washington

- Use of a pesticide on marijuana is allowed if
 - active ingredient is exempt from food crop
 - label has directions for use on unspecified food crops
 - Data have not resulted in EPA denying use of the active ingredient on tobacco.

2. Section 25b minimum risk pesticides (exempt from federal registration)

3. Section 24c Special Local Need (SLN) registrations to allow the use of pesticides on marijuana that have been approved by the WSDA



Washington State
Liquor and Cannabis Board



Washington
State Department of
Agriculture

Marijuana Producers, Processors, and Retailers
Bulletin No 16-03

ACTION REQUIRED

Date: June 30, 2016
To: Marijuana Industry Members
From: WSLCB
Subject: 15 Products Contain Undisclosed Pesticide Ingredients

The Washington State Department of Agriculture (WSDA) has detected residues of one or more undisclosed pesticide ingredients in the following 15 products. Several of these products contain ingredients that are not allowed for use on marijuana, which could cause marijuana to fail the Washington State Department of Health pesticide testing requirements for compliant marijuana products. In addition, some of these ingredients could result in the Washington State Liquor and Cannabis Board confiscating and destroying marijuana if they are found on products above the recently adopted action levels.

“I plan to continue my efforts in working with producer/processors, retailers, and labs to determine if the County should have a role in ensuring product safety. I will work with these groups and the state to ensure that marijuana consumers in King County can have confidence in safe and tested products.”

-Metropolitan King County
Councilmember Jeanne Kohl-Welles

Sept 15, 2016

Results of pesticide sampling-Dec 2015 and March 2016

The following illegally used pesticides were detected during random sampling:

Piperonyl Butoxide (enhances the potency of certain pesticides)

Carbaryl (likely to be carcinogenic)

Myclobutanil (when heated to a certain point, turns to cyanide gas)

Imidacloprid (acutely harmful to pollinators)

Boscalid (acute oral and dermal risk)

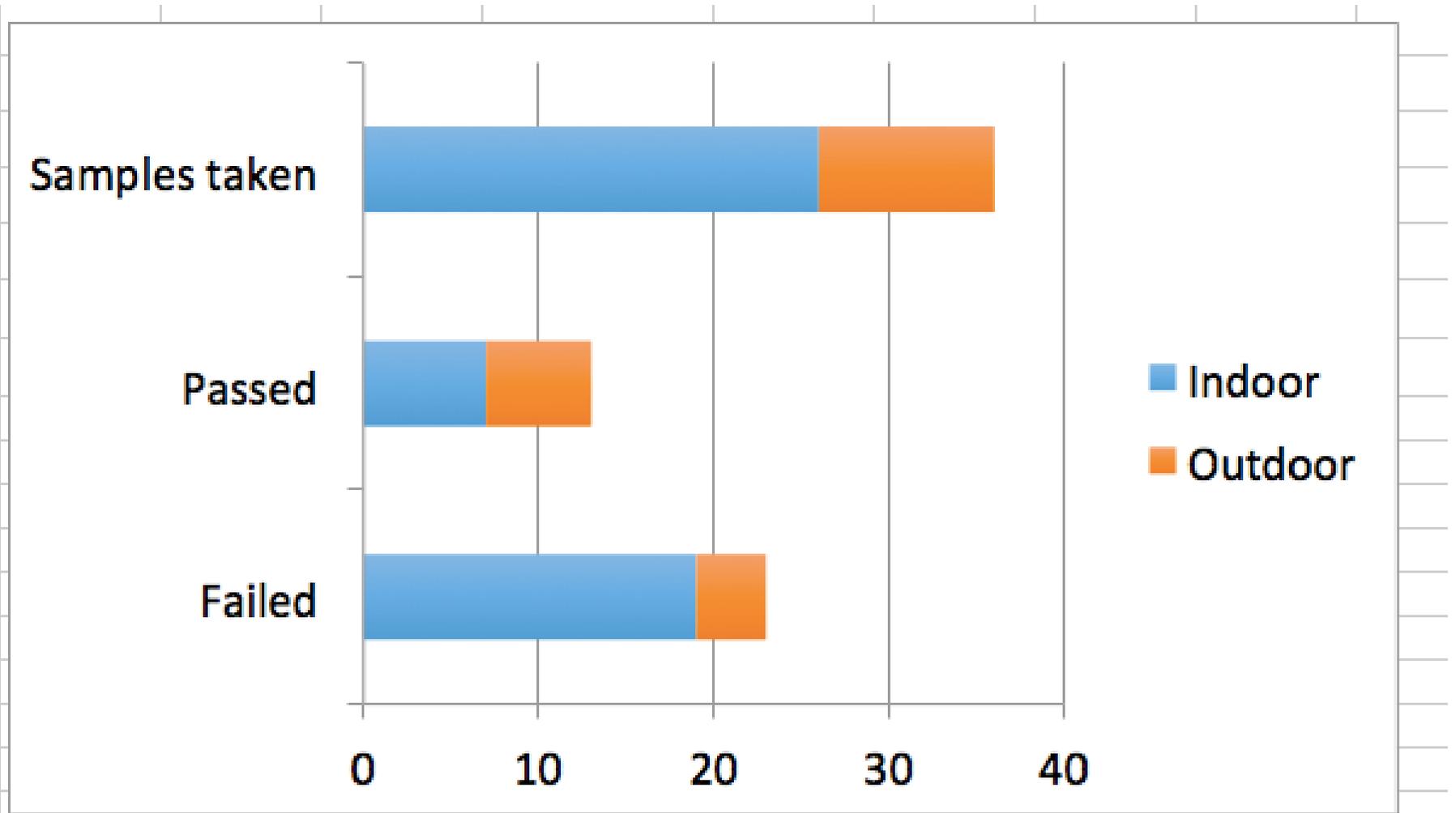
Permethrin (extremely toxic to fish and aquatic life, neurotoxic effects on mammals)

Propinconazole (Decomposition by heating may release toxic gasses)

Diuron (moderately to highly persistent in soils)

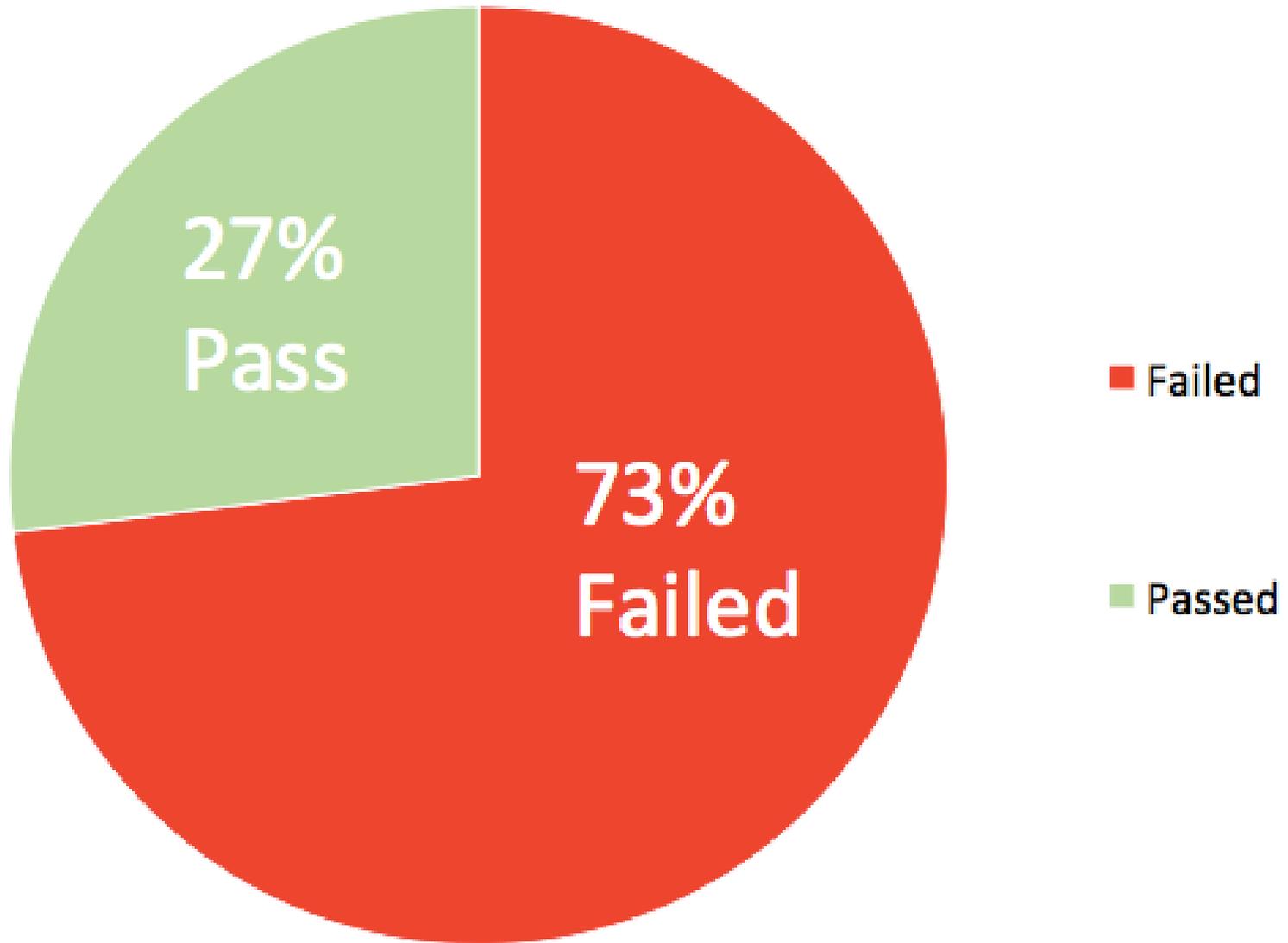
Carbendazim (suspected endocrine disruptor)

Sources: *The Stranger* and *Seattle Times*, EPA fact sheets,

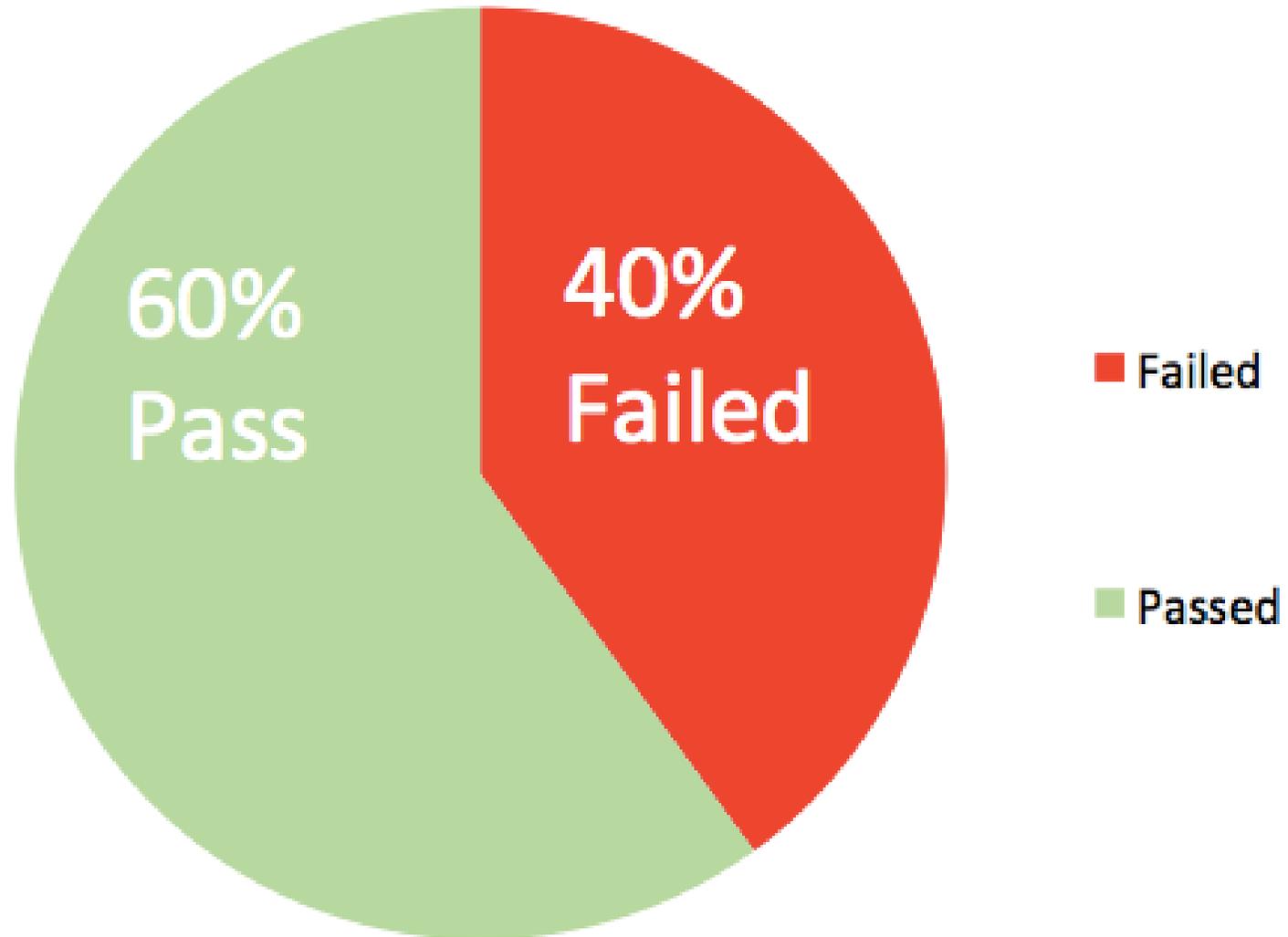


	Failed	Passed	Samples taken
Indoor	19	7	26
Outdoor	4	6	10

Percent of Indoor Samples that Pass/Failed



Percent of Outdoor Samples that Pass/Failed



Results of other studies: Cannabis Safety Institute, 2014

Comprehensive survey of pesticide use on Cannabis, compiled from data collected by Oregon Growers Analytical laboratory, in Eugene OR.

- The data: 389 samples of Cannabis flowers and 154 samples of concentrates,
- Analyzed between October and December of 2014.
- 65 compounds tested for

A large proportion of samples in this study tested positive for pesticides. If many of these samples would also fail typical EPA guidelines for agricultural products.

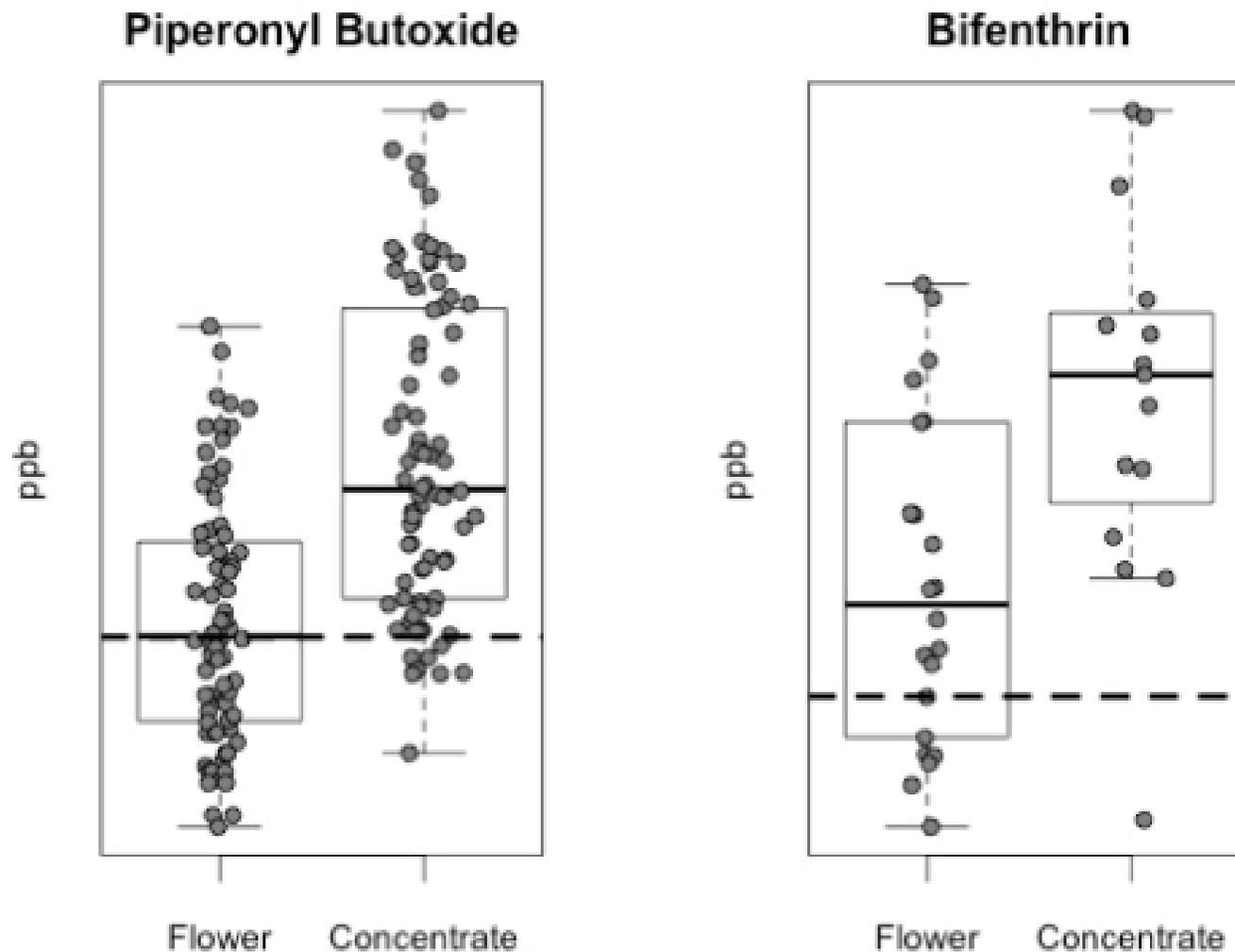


Figure 4. Distributions of the levels of PBO and bifenthrin for flowers versus concentrates. The OHA limit of 100 ppb is shown with a black hashed line. Note: The Y-axis is log scaled.

Observations

The high levels of pesticide residue in concentrates is consistent with the hypothesis that processes used to concentrate cannabinoids also concentrate pesticides.

Many pesticides have chemical properties (e.g. polarity and solubility) that are similar to cannabinoids.

The mean level of pesticides appears to be roughly 10x higher in concentrates versus flowers, cannabinoids are only about 2-5x more concentrated in extracted products.

Young Adult Use

Researchers compared 2010 and 2014 data from the Washington State Healthy Youth Survey.

There was virtually no change in the proportion of teens who reported it was "easy" to access marijuana in 2010 (55 percent), compared to 2014 (54 percent) after the new law was enacted, according to the study.

"Adolescents' Ease of Access to Marijuana Before and After Legalization of Marijuana in Washington State," Pediatric Academic Societies 2016 Meeting in Baltimore, May 1.

Pesticide Workgroup



Jeremy Moberg, Cannasol and Washington
Sungrowers Industry Association

Conclusions

- Pesticides have not been properly tested for use on cannabis (heating, ingesting, concentrated/volatized)
- Illegal and untested pesticides are being used in WA-putting public health and environmental health at risk
- Outdoor growers are less likely to be using illegal pesticides
- Concentrations have higher amounts of pesticides

Conclusions

- Cannabis can be successfully grown sustainably and without the use of pesticides
- Cannabis should be treated like an agricultural crop to allow integrated pest management techniques.
- Grower are in need of education to grow without pesticides.