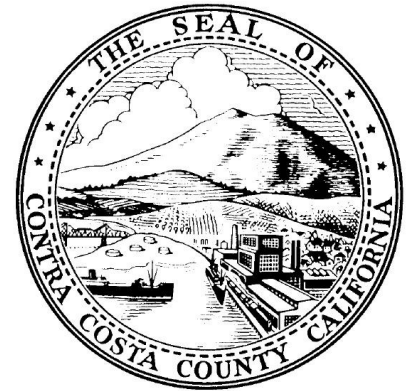


DRAFT Minutes

CONTRA COSTA COUNTY INTEGRATED PEST MANAGEMENT ADVISORY COMMITTEE An Advisory Body to the Board of Supervisors

March 20, 2025
10:00 AM



Held at the Agriculture Department Office, 2380 Bisso Lane in
Concord and the Office of Supervisor John Gioia, 11780 San Pablo
Avenue, Suite D, in El Cerrito.

Members Present: Carlos Agurto (Secretary), Susan Heckly, Jutta Burger, Michele Mancuso, Matt Slattengren (for Gabe Chan), Kimberly Hazard, Thomas Fenster

Members Absent: Susanna Thompson (Chair) Andrew Sutherland, Chris Lau, Roxana Lucero

Staff Present: Wade Finlinson

1. Convene and introductions

Acting in the Chair role, Carlos Agurto called the meeting to order at 10:02 AM.

2. Public comment on items not on this agenda

None

3. Consider approval of the January 16, 2025 Integrated Pest Management Advisory Committee meeting minutes

A motion was made and seconded (SH/JB) to approve the minutes as written.

Ayes:, Heckly, Mancuso, Burger, Hazard, Agurto

Noes: None

Abstain: Slattengren

Absent: Sutherland, Fenster, Lucero, Lau, Thompson

Public Speakers: None

Thomas Fenster arrived at 10:08 AM, prior to item #4.

4. Receive a presentation on pesticides measured in indoor dust from child care centers in Northern California

Dr. Kimberly Hazard presented the [attached](#) slides and answered questions from Committee members and staff.

A motion was made and seconded (MM/SH) to accept the slide presentations for item #4 and #5 as part of the record.

Ayes:, Heckly, Mancuso, Burger, Hazard, Fenster, Agurto, Slattengren.

Noes: None

Abstain: None

Absent: Sutherland, Lucero, Lau, Thompson

Public Speakers: None

5. Discuss the formation of this year's subcommittees and advise on potential goals, objectives, and other areas of focus for each one.

The Committee reviewed the IPM Coordinator's proposed subcommittee assignments and work plans. Committee members provided additional feedback. No formal action was taken. For 2025, the subcommittees will be comprised as follows:

Decision-Making Subcommittee: Carlos Agurto (Chair), Susanna Thompson, Andrew Sutherland, Gabe Chan, Chris Lau

IPM Training Subcommittee: Michele Mancuso (Chair), Susan Heckly, Carlos Agurto, Roxana Lucero, Ivan Godwyn (Ag. Department)

Nature-based Solutions Subcommittee: Thomas Fenster (Chair), Jutta Burger, Susanna Thompson, incoming Sustainability Commission representative, applicable representative from Public Works or Ag. Department

Public speakers: None

6. Receive updates and announcements from Committee members and staff

The following updates were provided:

- The IPM Coordinator reported on his attendance at recent seminars that included the International IPM Symposium in San Diego, and local events pertaining to vertebrate pest management and rangeland science.
- Carlos Agurto announced pending updates to the approved pesticide list for facilities, and highlighted attendance at the International IPM Symposium and Vertebrate Pest Conference seminar in Walnut Creek. He also provided an update on ground squirrel trapping and fumigation efforts.
- The Agriculture department has hired three Weed and Vertebrate Technicians this year instead of the usual two.
- Multiple organizations recently teamed up to submit a grant application to restore the Alameda/Contra Costa Weed Management Area (WMA). Grant results are expected to be announced in June.

Public Speakers: None

7. Recommend future agenda items

The next meeting of the full Committee is scheduled for September 18, 2025.


Public Speakers: None

The meeting adjourned at 11:53 AM.

Attachments:

[Pesticides measured in indoor dust from child care centers in N. California](#)
[Item #5 staff report presentation slides](#)

—end of meeting minutes—



Pesticides measured in indoor dust from child care centers in Northern California

Kimberly Hazard, PhD

Environmental Health Sciences, UC Berkeley

CA Dept. of Toxic Substances Control: kim.hazard@dtsc.ca.gov



Background

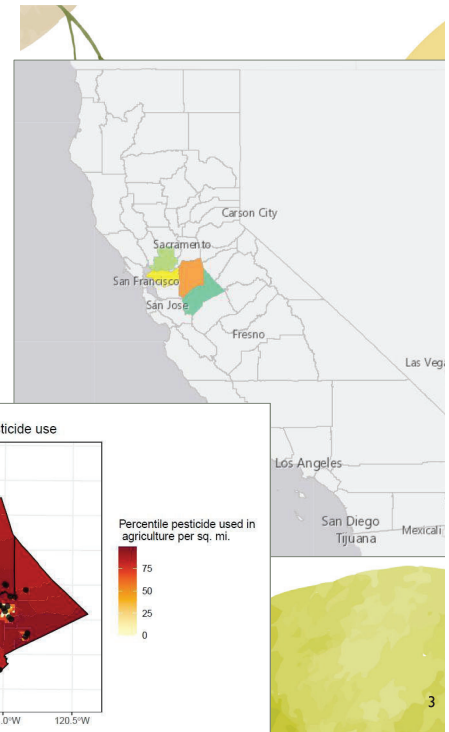
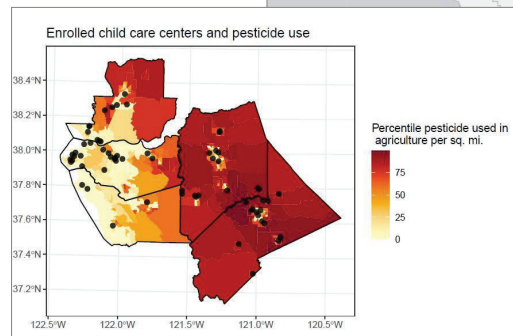
- Young children are exposed to pesticides in their environment and may be at risk for long-term adverse health outcomes.
- Children are uniquely vulnerable to exposures.
- One million children in California under six years of age attend child care programs.
- Little is known about health risks from exposures in child care centers, particularly pesticide mixtures.



Photo: ©UCSF CCHP

UCSF Healthy Children & Environments Study

- What is the effect of an Integrated Pest Management (IPM) intervention on pesticide levels in child care?
- Randomized-control trial of licensed child care centers in 4 counties
 - Contra Costa & Solano/Alameda
 - San Joaquin & Stanislaus
- Indoor carpet dust samples



What is Integrated Pest Management (IPM)?

- An approach to managing pests that focuses on:
 - Preventing infestations (by keeping pests out and getting rid of food, water, and shelter)
 - Monitoring pests
 - Reducing the use of harmful pesticides
 - Minimizing health risks to people and the environment.



Photo: ©UCSF CCHP

Dust collection & analysis

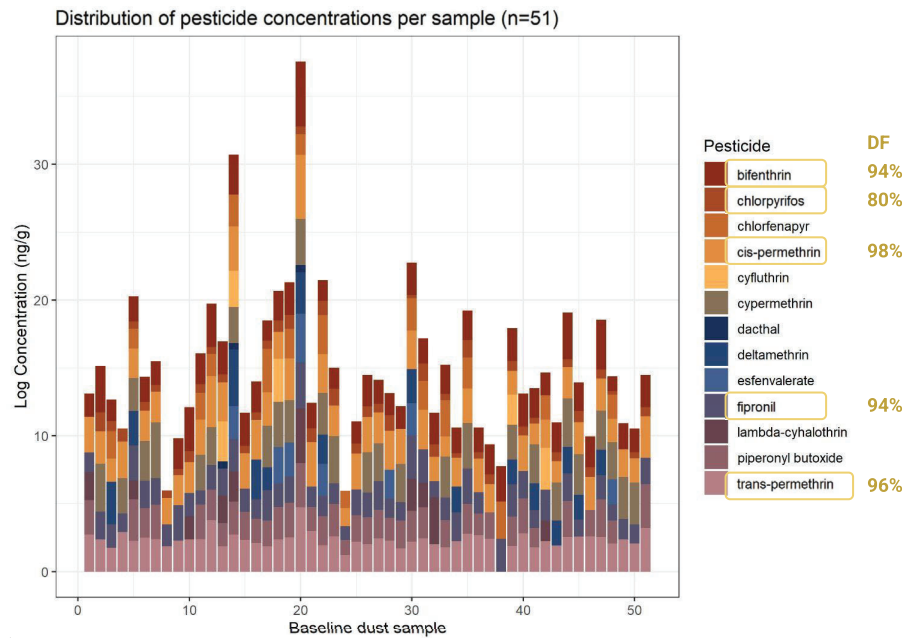


- 51 baseline carpet dust samples, collected 2017-2019
- Southwest Research Institute (SwRI) analyzed samples for 14 structural and agricultural pesticides by GC/MS

Pesticides measured in carpet dust

Pesticide by Chemical Classification	Baseline Detection Frequency	Use	Pesticide by Chemical Classification	Baseline Detection Frequency	Use
Pyrethroid			Alkyl Phthalate		
Blifenthrin	94%	Commercial (some ag.)	Dacthal	0%	Herbicide
Cyfluthrin	10%	Mostly agriculture	Organophosphate		
Cypermethrin	55%	Mostly commercial & residential	Chlorpyrifos	80%	Agriculture (restricted 2020)
cis-Permethrin	98%	Mostly commercial & residential	Diazinon	0%	Agriculture
trans-Permethrin	96%		Phenylpyrazole		
Deltamethrin	27%	Non-agricultural	Fipronil	94%	Commercial & residential
Esfenvalerate	18%	Agriculture	Pyrrole		
Lambda-Cyhalothrin	18%	Mostly agriculture	Chlorfenapyr	24%	Non-food uses
Synergist					
Piperonyl Butoxide	73%	Added to formulations			

Pesticides are ubiquitous and children are exposed to mixtures.



Hazard K, et al. *JESEE* (2023)

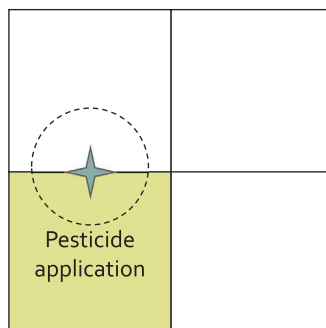
Predictors of pesticide levels in carpet dust

Objective: Characterize pesticide contamination in early care and education (ECE) centers and identify predictors of pesticide concentrations and loading in dust collected from classroom carpets.

Methods

Study Population: UCSF Healthy Children & Environments Study

- 51 baseline dust samples, collected 2017-2019
- Integrated Pest Management (IPM) Checklist, observations & director interviews
- CA Dept. of Pesticide Regulation Pesticide Use Report (PUR) data
- Multivariable Tobit regression for most frequently detected pesticides



50% of buffer within section



9

Key Takeaways

Location in the San Joaquin Valley strongest predictor of pesticide levels in dust

Associations between:

- ↑ bifenthrin & ↑ density of **agricultural bifenthrin use** within 3 km in the past year / location in San Joaquin Valley
- ↓ chlorpyrifos levels & **better IPM practices**
- ↓ chlorpyrifos levels & **more carpet throughout room**
- ↑ fipronil levels & **professional applications** of fipronil at the child care center in the past year



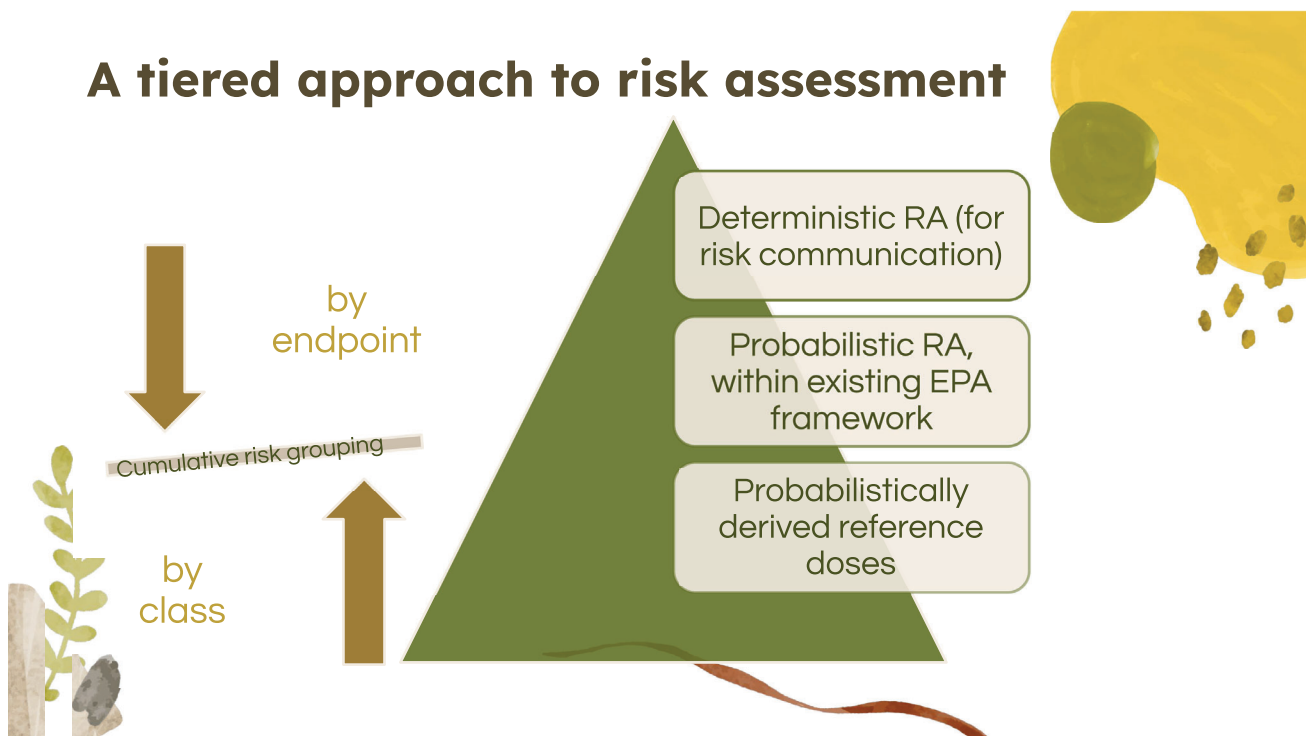
Health risk assessment

Objective: Determine if children's exposures to pesticides in child care via non-dietary ingestion and dermal absorption exceed health-protective reference values, and compare traditional risk calculations to methods that account for uncertainty, variability, and cumulative risk.





A tiered approach to risk assessment



Exposure: Potential daily intake (PDI) (mg/kg-day)

Assumption: in care 6
hours, 5 days, 48 weeks

Measured body
weight (kg)



EPA assumptions (children ages
2-6yr / in child care):

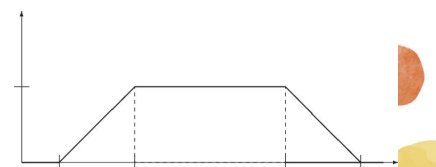
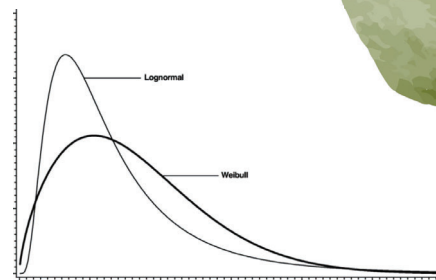
- **Dust ingestion** (g/day)
- **Surface area** to body weight ratio (m²/kg)
- Fraction of **body surface exposed** and **soil adhered** to body parts (g/m²)
- How much pesticide is **absorbed** through skin (10%)

Measured pesticide concentrations (ng/g)

Illustration by Icons
8 from Ouch!

Probabilistic Dose Calculations

Input	Distribution
Body weight	Log-normal, measured min/max
Pesticide concentrations	Log-normal for most Weibull for cypermethrin and Σ permethrin
Time	Trapezoidal 15-50 hrs/week, most 30-36 hrs 0.8-3.2 years, most 1-2 years
Surface area exposed Soil adherence factor Dust ingestion rate	Log-normal Based on US EPA Exposure Factors / ATSDR Exposure Dose Guidance



Estimating risk: Compare exposure to health benchmark

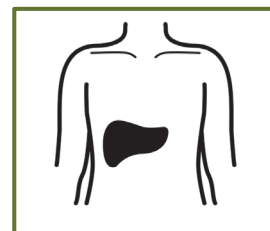
- Hazard Quotient (HQ)
 - PDI / RfD
 - HQ > 1 = risk
 - Cumulative risk: sum HQs by endpoint (Hazard Index)
- Margin of Exposure (MOE)
 - MOE = POD / Exposure
 - MOE < 300 = risk
 - Cumulative risk: for pyrethroids, apply Relative Potency Factors (RPFs) to PDIs

$$MOE = \frac{BMD_{index}}{\sum RPF_p \times PDI_p}$$



Cumulative risk by endpoint

Measured Pesticides		Reference Dose (RfD) (mg/kg-day)	
Class	Pesticide	RfD	Source
Organophosphate Pyrethroid	Chlorpyrifos	0.0001	OEHHA
	Bifenthrin	0.0150	IRIS
	Cyfluthrin	0.0117	HHBP
	Cypermethrin	0.0716	HHBP
	Deltamethrin	0.0150	HHBP
	Esfenvalerate	0.0110	HHBP
	Lambda-Cyhalothrin	0.0009	HHBP
Other	Permethrin	0.0500	IRIS
	Fipronil	0.0002	HHBP
	Chlorfenapyr	0.0500	HHBP
	Piperonyl Butoxide	0.1600	HHBP



Noun Project images created by: Gregory Montigny & mungang kim

Cumulative risk by class

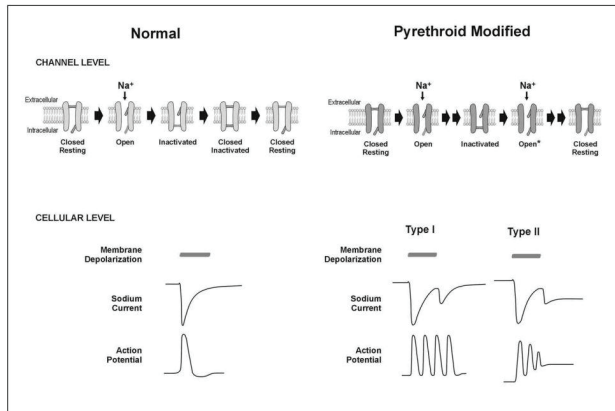


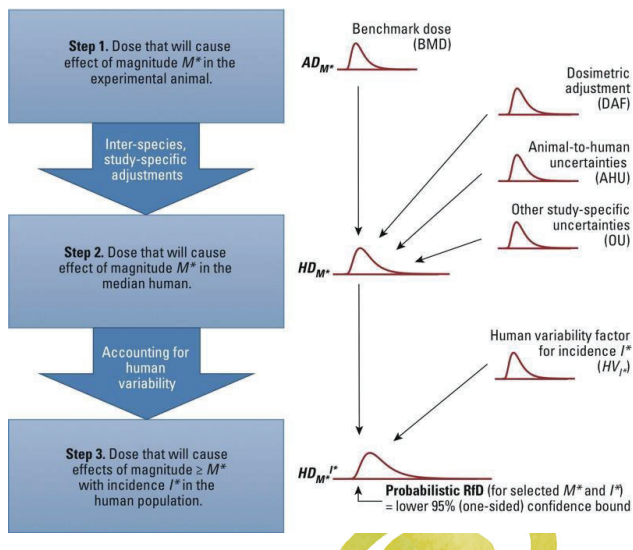
Figure 2.2. Effects of pyrethroids on Na channels, currents, and action potentials (From Shafer et al. (2005))

Table 4.5.1. Relative Potency Estimates for Pyrethroids Included in the Screening Level Cumulative Risk Assessment

Pyrethroid	Oral BMD ₂₀	Oral RPF ^{b,d}
Allethrin ^c	135	0.11
Bifenthrin	14.3	1.01
Cyfluthrin	12.6	1.15
Lambda-Cyhalothrin	8.9	1.63
Cyphenothrin	100 ^a	0.15
Cypermethrin	76.3	0.19
Deltamethrin	14.5	1.0
Esfenvalerate	40.5	0.36
Fenpropathrin	29	0.50
Tau-Fluvalinate	14.5	1.0
Imiprothrin	750 ^a	0.02
Permethrin	156	0.09
Prallethrin	150 ^a	0.10
Pyrethrins	800 ^a	0.02
Resmethrin	291	0.05

Beyond the RfD

Use a probabilistically derived reference dose in risk estimations (Hazard Index)



$$\text{PrRfD} = \text{HD}_{05}^{01}$$

Human Dose at which 1% of population shows an effect of 5% (such as change in locomotor activity) with

95% confidence

Key Takeaways

- We found that estimated pesticides exposures to young children in child care centers, using both deterministic and probabilistic methods to estimate exposures distributions and cumulative risk, were not likely to exceed established RfDs.
- Using probabilistic dose estimates with PrRfDs did not result in Hazard Indices exceeding 1.
- These estimated exposures represent just a portion of the true potential total daily exposure for young children.



Concluding thoughts

- Pesticides are ubiquitous in CA, child care settings are not unique
- Focus for children's environments: IPM & dust management
- Upstream IPM practices matter
- Keep studying and investing in child care programs!

Thank you!

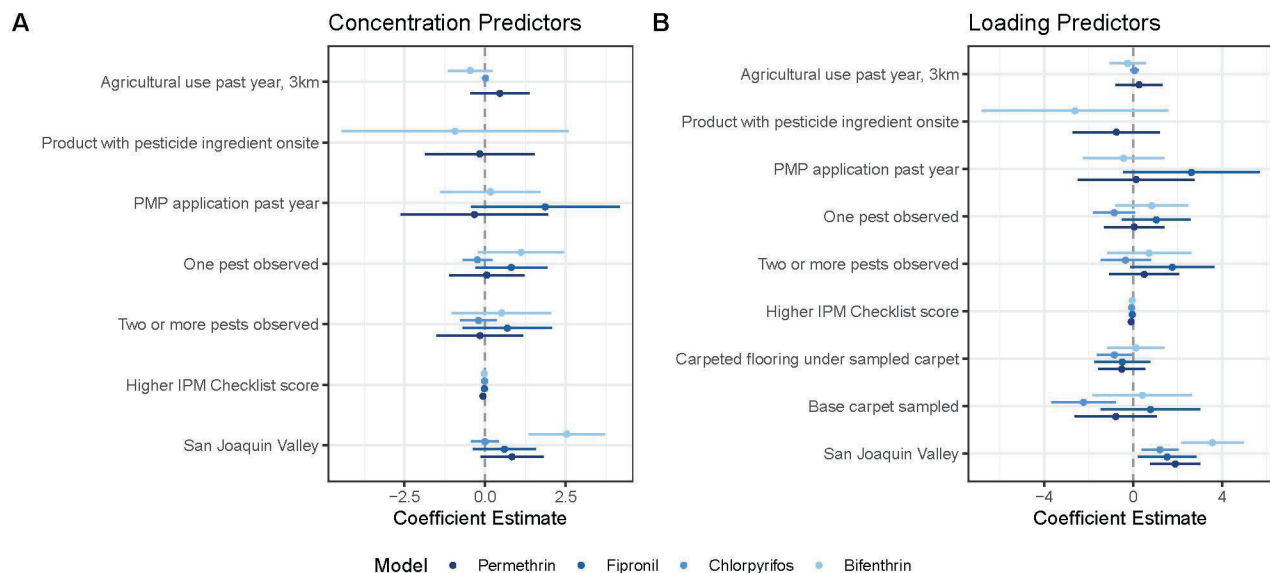
Acknowledgements:

- HCES study participants – providers, children, and families
- Research staff & child care health consultants & advisors
- Funding: NIEHS R01ES027134

UCSF California Childcare Health Program



Predictors of pesticide levels in ECE carpet dust



Program and director characteristics (n=51)

Geographic region	n (%)
San Francisco Bay Area	25 (49%)
San Joaquin Valley	26 (51%)
Program type	
Non-profit private	15 (29%)
For-profit private	10 (20%)
Head Start/Early HS	6 (12%)
CA State Preschool	5 (10%)
Blended	15 (29%)
Program size	
10-49 children	21 (41%)
50-99 children	20 (39%)
100-200 children	10 (20%)
Director years of experience in child care	
4-19 years	21 (41%)
20-35 years	26 (51%)
>36 years	4 (8%)

25

Child characteristics (n=253)

	Mean (SD), Range
Age	4.2 (0.6), 2.8 – 5.2
Body weight	18.0 (3.1), 11.2 – 34.2
Sex	n (%)
Male	125 (49%)
Female	128 (51%)
Race & ethnicity	n (%)
Asian / Pacific Islander	12 (5%)
Black	21 (8%)
Hispanic / Latine	68 (27%)
Native American / Native Alaskan	5 (2%)
White	60 (24%)
Multi-Racial	43 (17%)
Other / missing	44 (17%)

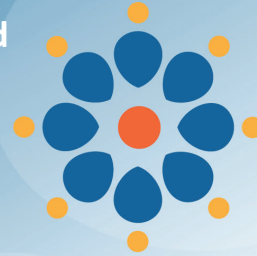
26

Most frequently detected pesticides	Uses and Products
Permethrin	A pyrethroid insecticide. Products containing permethrin may be liquids, powders, dusts, aerosol solutions, sprays, and treated clothing. Permethrin is used in cattle ear tags and flea collars, or in spot-on treatments for dogs. Present in Raid, head lice and scabies treatments for humans.
Bifenthrin	A pyrethroid insecticide. Various agricultural crops and in homes. Available in sprays, granules, and aerosols.
Cypermethrin	A synthetic pyrethroid used as an insecticide in large-scale commercial agricultural applications as well as in consumer products for domestic purposes (such as Raid).
Fipronil	A powder-based insecticide used to control many insects in residential and agriculture. Fipronil is used in granular products for grass, gel baits, spot-on pet care products, liquid termite control products, and products for agriculture. It is a white powder with a moldy odor.
Chlorpyrifos	Banned for residential use in 2000, the only legal indoor use for chlorpyrifos is in baits. Still used in agriculture and other settings (i.e. mosquito control; golf courses, green houses). Virtually all agricultural use of the pesticide chlorpyrifos in California will end by December 31, 2020.

March 20, 2025 Meeting of the Integrated Pest Management Advisory Committee (IPMAC)

Item #5

DISCUSS the formation of this year's subcommittees and ADVISE on potential goals, objectives, and other areas of focus for each one.



CONTRA COSTA
HEALTH

1

2025 IPMAC Subcommittees

- IPM Decision-Making Subcommittee
- IPM Training Subcommittee
- A new subcommittee to review potential overlap with IPM practices and nature-based climate solutions (NBS Subcommittee).
- Potentially reconvene an IPM Outreach Subcommittee.

2



IPM Decision-Making Subcommittee

Description: Create and revise documentation that transparently depicts the rationale for pest management decisions within County operations and make recommendations for operational refinement.



IPM Decision-Making Subcommittee

Proposed composition:

- Carlos Agurto (Chair)
- Susanna Thompson
- Andrew Sutherland
- Chris Lau
- Gabe Chan



IPM Decision-Making Subcommittee

Background: This is the only standing IPMAC subcommittee. The work of this body grew out of community advocacy for County departments to consider alternatives to chemical controls and to be transparent about how pest-related decisions are made.



IPM Decision-Making Subcommittee

Draft goals/objectives for 2025

1. Revise ground squirrel decision document.
2. Review commensal rodent and gopher documents.
3. Review grazing documents
4. Consider alternate formats for the IPM Decision Tree to encourage greater adoption.



IPM Decision-Making Subcommittee

Potential collaborators:

University of California Cooperative Extension subject matter experts, East Bay Regional Parks, Contra Costa Water District, East Bay Municipal Utility District, Metropolitan Water District of Southern California, various reclamation districts, CA Department of Fish and Wildlife, CA Division of Water Resources, and other applicable representatives.



IPM Training Subcommittee

Description: Advise the IPM Coordinator in developing training programs to ensure that County employees and contracted service providers understand IPM techniques and County policy.



IPM Training Subcommittee

Proposed composition:

- Michele Mancuso (Chair)
- Susan Heckly
- Carlos Agurto
- Roxana Lucero
- Ag. Dept Representative



IPM Training Subcommittee

Background: The County IPM Policy states that “The IPM Advisory Committee will also work with the County IPM Coordinator to develop IPM training programs for County Departments, their employees, and applicable vendors and contractors to assist in compliance with the County’s IPM Policy.” This subcommittee initially met in 2023 and is looking to reconvene in regular intervals in 2025.

IPM Training Subcommittee

Draft goals/objectives for 2025

1. Identify IPM training mandates
2. Review the quality of existing programs
3. Evaluate cost data for existing programs
4. Identify areas for improvement and project associated costs

11

IPM Training Subcommittee

Potential collaborators:

County Risk Management, applicable staff from Agriculture/Weights & Measures Department, Public Works Department administrative staff, existing trainers and Agricultural Pest Control Advisors (PCA) under contract with Public Works, County Human Resources, Contra Costa Television, and others as applicable.

12



NBS Subcommittee

Description: Research applicable land management practices whose co-benefits may include pest prevention, cultural pest management controls, carbon storage in healthy soils, runoff prevention, improved range lands and other elements of heightened stewardship.



NBS Subcommittee

Proposed composition:

- Tommy Fenster (Chair)
- Jutta Burger
- Susanna Thompson
- incoming Sustainability Commission Representative
- applicable representative from the Public Works or Agriculture Departments



NBS Subcommittee

Background: The first purpose of the County IPM Policy and IPMAC is to “Minimize risks and maximize benefits to the general public, staff and the environment as a result of pest control activities conducted by County staff and contractors” Additional Contra Costa County documents that promote these practices include the 2024 Climate Action and Adaptation Plan Update and Healthy Lands, Healthy People: A Carbon Sequestration Feasibility Study.

15



NBS Subcommittee

Draft goals/objectives for 2025

1. Identify NBS practices that overlap with IPM strategies
2. Identify County parcels that could benefit from these practices
3. Evaluate cost/benefit projections for potential pilot demonstrations
4. Make recommendations for implementation.

16



NBS Subcommittee

Potential collaborators:

Contra Costa Resource Conservation District, researchers from Galindo Creek Field Station at the Concord Campus of California State University East Bay, Green Government Group (G3) champions from Agriculture/Weights & Measures & Public Works Departments, UC system experts, StopWaste, Civicorps, and other similar institutions.

17



IPM Outreach Subcommittee

Description: Promote IPM principles within Contra Costa County and the broader region.

18



IPM Outreach Subcommittee

Proposed composition:

- TBD pending IPMAC action



IPM Outreach Subcommittee

Background: One goal of the County IPM Policy is to “Create public awareness of IPM through education” IPMAC previously convened a subcommittee on IPM outreach in 2017 and 2018. One result of that effort included the development and circulation of articles that promoted IPM awareness and encouraged IPM practices in a variety of settings.



IPM Outreach Subcommittee

Draft goals/objectives for 2025

1. Evaluate existing IPM outreach resources
2. Identify gaps in the availability of locally-relevant information
3. Produce materials or recommendations that enhance the circulation of related information to fill those gaps.

21



IPM Outreach Subcommittee

Potential collaborators:

UC Cooperative Extension/Master Gardeners, Our Water Our World partners, communications personnel from applicable County departments, and others identified by the subcommittee.

22

Staff Recommendations

Staff recommends that IPMAC members provide feedback and suggest modifications to the above information. It is also recommended to postpone consideration of forming an outreach subcommittee until the September meeting. IPMAC members are also encouraged to identify what information the IPM Coordinator can provide at the respective kickoff of each subcommittee that will help achieve desired aims.

23

Presenter: Wade Finlinson

Contact: 925.655.3214



CONTRA COSTA
HEALTH

24