

Human Impacts of Current Pesticide Use

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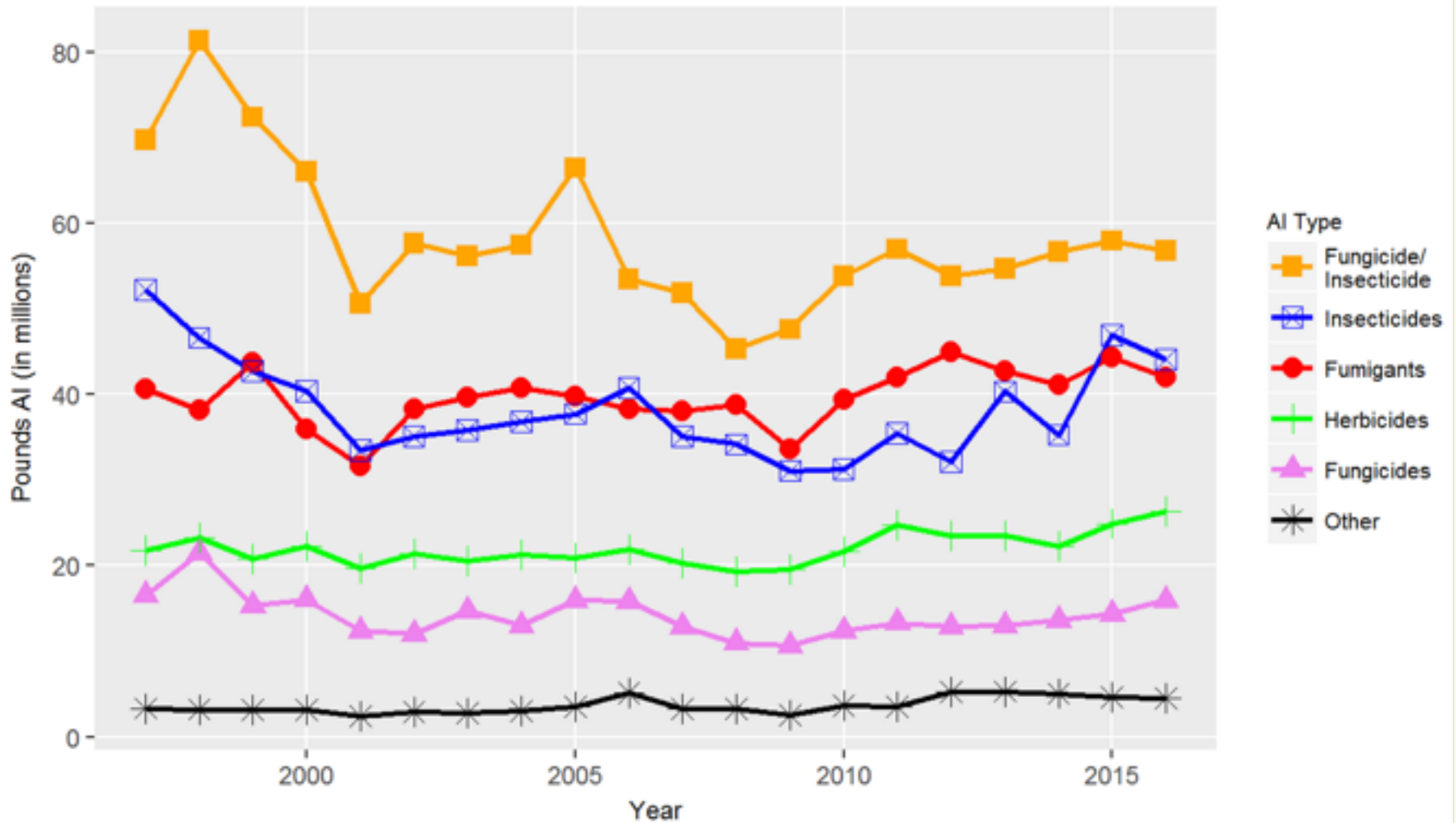


What are Pesticides?

- Chemicals designed to kill plants, insects, rodents, fungi, etc.
- Due to their very nature, they can be hazardous to human health and the environment.



CA Pesticide Use, 2016



Pesticides Are All Around Us



Sources of Human Exposure

At Work

- Working in greenhouses and in or near fields.
- Post-harvest treatments.

At Home

- Living in agricultural areas -- drift exposure can be substantial.
- Home applications.
- Pesticide residues come home on clothes and shoes.
- Work clothes washed with family clothes.



Acute Effects of Pesticide Exposure

- Irritation of eyes, nose, throat
- Skin irritation
- Respiratory difficulty
- Headache, exhaustion
- Blurred vision
- Stomach cramps, vomiting
- Excessive salivation
- Tremors, staggering gait, dizziness
- Numbness
- Chest tightness
- Excessive sweating



Routes of Exposure - I

- Breathing pesticide spray and fumigant drift.
- Through eyes.
- Ingesting pesticide residues from hands or food.
- Skin contact (plant residues and spray mix).



Routes of Exposure - II

Many chemicals can pass to a baby *in utero* or via breast milk.



Chronic Effects: Adults & Children

- Nervous system damage
- Development problems
- Hormone disruption
- Immune system damage
- Cancer
- Reproductive effects
- Birth defects

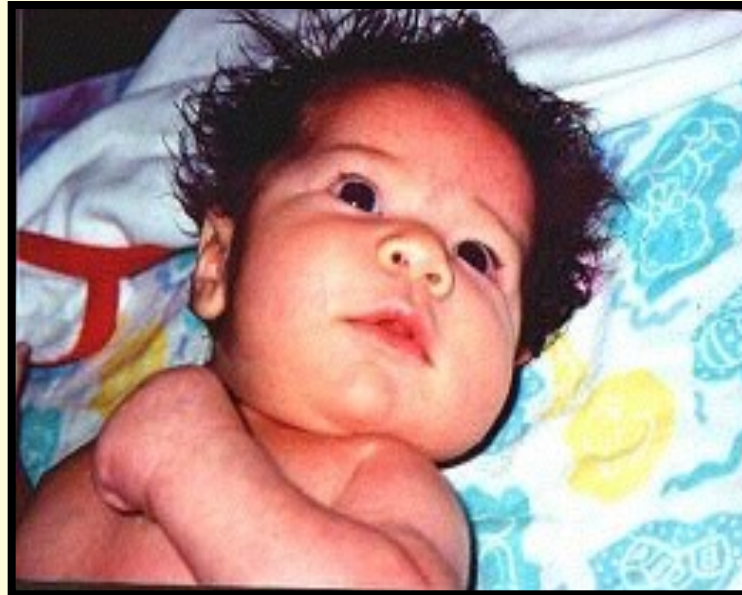
A California study showed farmworkers were more likely to develop some leukemias by 59%, stomach cancer by 70%, cervical cancer by 63%, and uterine cancer by 68%.

(Source: Mills and Kwong, 2001)



Children are Particularly Vulnerable

- Less developed nervous systems and rapidly growing cells and organs systems;
- Less developed capacity to decontaminate;
- Die more easily from high-level exposures to pesticides.



CA pesticide poisonings - 2015

Occupational:

Drift cases = 310

Residue = 64

Direct spray = 33

Spill or other direct = 102

Non-occupational:

Drift = 507

Residue = 121

Direct spray = 86

Spill or other direct = 225

Total = 1,187

From 2001-2006:
2513 cases (about
420/year)



Farmworker Acute Poisonings: Top Crops

Crop/Site



Underreporting is a Serious Problem

Many, maybe most cases go unreported:

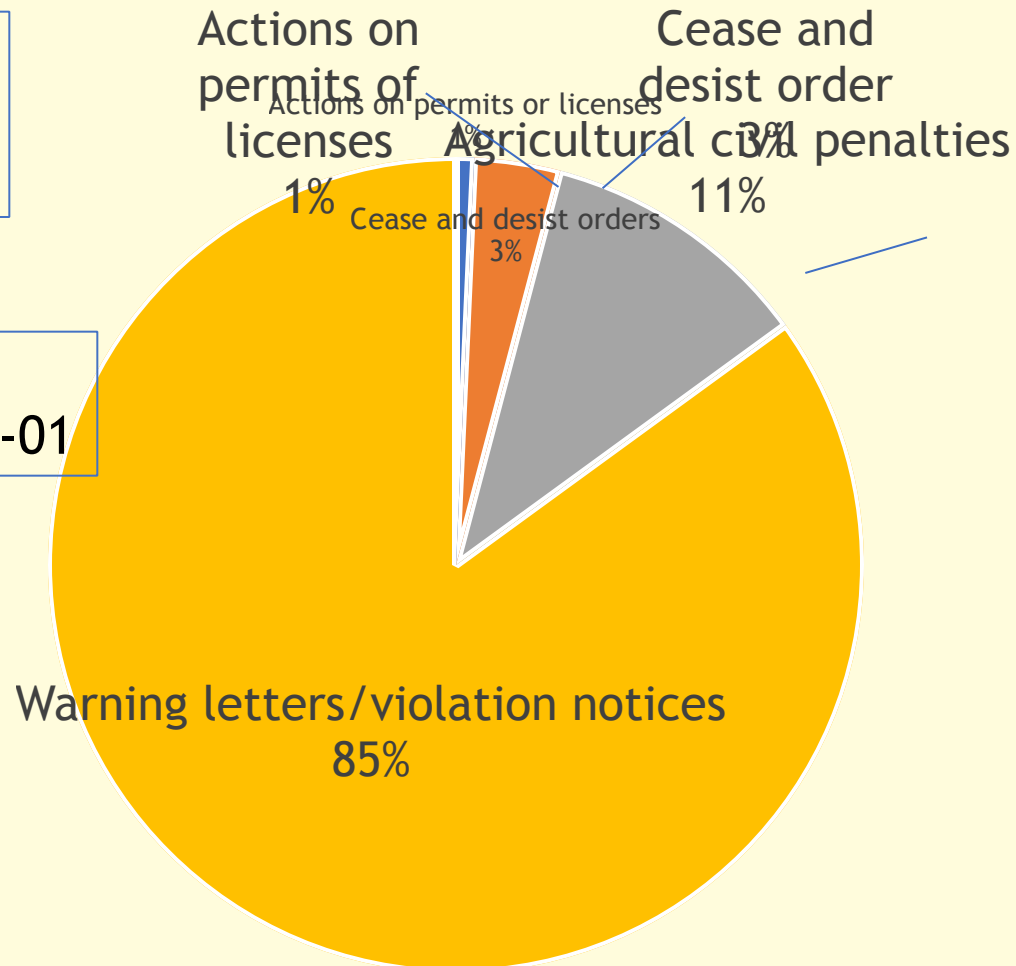
- No insurance coverage.
- No transportation provided.
- Fear of retaliation and job loss.
- Workers receive no or little information about pesticide hazards.
- Physicians unfamiliar with signs and symptoms or reporting.



Laws Inadequate; Enforcement Poor

In 38% of cases - No laws broken ('97-'00)

Enforcement Actions - 2000-01



Results Summary

1. Poisonings are too common and underreported
2. Most cases occur from exposure to:
 - (a) pesticide drift
 - (b) residues in fields
 - (c) direct sprays or spills
3. Reported poisonings result from a combination of:
 - (a) high pesticide use,
 - (b) insufficient laws and regulations,
 - (c) poor enforcement of existing laws and regulations.



Climate change will exacerbate pesticide health effects

- Increases in temperature will enhance the toxicity of contaminants.
- Increases in temperature will increase pest populations.
- Increased pest problems will lead to increased pesticide use.
- Decreases in precipitation may enhance volatilization of pesticides, and increase air pollution.
- Greater precipitation & floods will increase water contamination.



Thank you!

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