Fields of Poison 2002

California Farmworkers and Pesticides

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Executive Summary

Agricultural workers face greater threat of suffering from pesticide-related illnesses—including acute poisonings and long-term effects such as cancer and birth defects—than any other sector of society. Farmworkers, and often their children, are regularly exposed to pesticides in many ways: mixing or applying pesticides; planting, weeding, thinning, irrigating, pruning, harvesting, and processing crops; or living in or near treated fields.

To shed light on this issue, the statewide coalition Californians for Pesticide Reform (CPR) published *Fields of Poison: California Farmworkers and Pesticides* in June 1999. The report presented California Department of Pesticide Regulation (DPR) data showing that from 1991 to 1996 DPR reported nearly 4,000 cases of farmworker pesticide poisoning. Using government reports, worker testimonials, and other resources, *Fields of Poison* described a myriad of barriers to reporting pesticide-related illnesses and concluded that reported illnesses represented only the tip of the iceberg of a yet more serious problem. A third report focus was on the statewide rampant lack of worker safety law enforcement. This report updates *Fields of Poison.*

Since 1999, DPR—the primary regulatory agency responsible for enforcing federal and state worker safety laws—has improved pesticide illness reporting and completed important evaluations of enforcement program weaknesses. However, the most fundamental problems highlighted in *Fields of Poison* remain and farmworkers continue to face unacceptable threats of exposure to hazardous pesticides.

Reported cases down, but for unclear reasons

Statewide, reported agricultural pesticide poisonings have decreased from a yearly average of 665 cases (1991–1996) to 475 (1997–2000). Many cases, however, go unreported, so true figures may be much higher. While reduced use of some high toxicity pesticides may have contributed to the decrease in reported illnesses, the drop may also reflect doctors' failure to recognize and/or report pesticide-related illnesses; failure of insurance companies to forward doctors' illness reports to the proper authorities; or farmworker reluctance to seek medical attention for suspected pesticide exposure. We strongly suspect that rising health care costs, decreases in number of weeks worked, and other recent demographic and political changes have heightened farmworker reluctance to seek medical attention for pesticide illnesses and exacerbated underreporting.

Pesticides involved in poisoning cases are among the most hazardous

Fourteen of the top 20 pesticides linked to reported illnesses are classified as particularly hazardous, Bad Actors (Table I). The fumigant metam-sodium was the most frequently listed Bad Actor. Of particular note is the number of exposures to organophos-

Table I. Top 20 Pesticides Implicated in Reported Poisoning Cases, 1998–2000

Pesticide[a]	# Cases 98-00	Bad Actor[b]	
Not determined	509		
Adjuvant	251		
Sulfur	202		
Metam-sodium	194	Yes	developmental toxin, carcinogen
Chlorpyrifos	156	Yes	nerve toxin, moderate acute toxicity, suspected endocrine disruptor
Sodium hypochlorite	110	Yes	high acute toxicity
Dimethoate	103	Yes	nerve toxin, high acute toxicity, developmental toxin, possible carcinogen
Propargite	66	Yes	high acute toxicity, developmental toxin, carcinogen
Petroleum oil	59		
Glyphosate	55		
Methomyl	54	Yes	nerve toxin, high acute toxicity, suspected endocrine disruptor
Carbofuran	40	Yes	nerve toxin, high acute toxicity
Diazinon	38	Yes	nerve toxin, moderate acute toxicity, developmental toxin
Myclobutanil	38	Yes	slight acute toxicity, developmental toxin
Naled	36	Yes	nerve toxin, moderate acute toxicity, developmental toxin
Copper hydroxide	36		
Iprodione	35	Yes	slight acute toxicity, carcinogen
Spinosad	33		
Oxydemeton-methyl	32	Yes	nerve toxin, high acute toxicity, developmental toxin
Methyl bromide	31	Yes	high acute toxicity, developmental toxin
Esfenvalerate	28		
Mancozeb	26	Yes	developmental toxin, carcinogen

Source: California DPR PISP data 2002, and the PAN online pesticide database (www.pesticideinfo.org).

a. All pesticides DPR considered implicated in agricultural poisoning cases from 1998 to 2000. More than one pesticide may be listed for a given case; hence the total number of pesticides listed exceeds the number of reported poisoning cases. In addition to pesticides, this list includes the categories "not determined" and "adjuvant."

b. PAN coined the term Bad Actor to describe pesticides that are 1) known or probable carcinogens, 2) reproductive or developmental toxicants, 3) neurotoxic cholinesterase inhibitors, 4) known groundwater contaminants, or 5) of high acute toxicity.

phate nerve toxin insecticides. For example, agriculture continues to widely use chlorpyrifos—recently banned for almost all home use.

Grapes and soil fumigation lead in numbers of poisonings

Grapes continue to rank first in reported illnesses, attributed in part to frequent high level applications of sulfur. Soil (first identified in 1998 as an application site) ranks second with 222 cases listed (Table II). Of those cases, 195 (97%) involved exposure to soil fumigants.

Most reported poisonings occur in Central Valley counties

The counties with the greatest number of reported pesticide poisonings from 1997 to 2000 were Tulare, Fresno, Kern, and Kings in California's Central Valley, and Monterey on the Central Coast (Table III).

Worker safety regulations are inadequate and often violated

Fifty-one percent of poisoning cases from 1998 to 2000 occurred when pesticides **drifted** from the site of application onto workers. Another 25% resulted from dermal contact with pesticide **residues**. Violations contributed to 373 (55%) of the drift and 143 (43%) of the residue cases (Figure I). DPR found no relevant violations in 286 (42%) and 189 (56%) of drift and residue cases respectively. In other words, in a substantial number of cases, apparent compliance with existing laws and regulations failed to protect workers from poisoning.

Table II. Acute Poisoning Cases—Top 10 Crops,[a] 1997–2000 and 1991–1996

Crop	# Cases 97–00 (4 years)	# Cases 91–96 (6 years)
Grapes	331	539
Soil	222	b
Oranges	124	165
Cotton	116	399
Packing/processing	99	c
Almonds	98	102
Alfalfa	58	70
Ornamentals	54	104
Lettuce	44	101
Lemons	40	24
Tomatoes	38	102
Broccoli	32	307
Strawberries	27	78
subtotal	**1283**	**1991**
All other crops/sites	488	856
Unknown	128	1144
Total	**1899**	**3991**
Annual average	**475**	**665**

Source: California DPR PISP data 2002.
a. Top ten crops/application sites for each period.
b. Prior to 1998 soil was not listed as an application site.
c. Prior to 1997 packing/processing was not considered an application site.

Table III. Number of Reported Poisonings in Top 10 Counties, 1997–2000

County	# Cases
Tulare	427
Fresno	221
Monterey	178
Kern	175
Kings	96
San Joaquin	73
Riverside	68
San Diego	68
Madera	63
Merced	60
subtotal	**1429**
Other counties	470
Total	**1899**

Source: California DPR PISP data 2002.

DPR reports reveal widespread violations and investigation flaws

From 1997 to 2001, DPR staff observed 572 pesticide-related field operations in 20 counties and reported that over one-third violated one or more safety regulations. Common violations included failure to provide useable protective equipment, washing/decontamination facilities, and fieldworker access to pesticide use information. DPR found that 88% of protective equipment violations were due to employer negligence, and only 12% to worker failure to utilize available protective equipment.

A DPR review of county illness investigations revealed serious investigation flaws including interviewing workers in the presence of their employers and using employer-affiliated translators at least one third of the time. A DPR analysis of illness episodes between 1991 and 1999 showed that 68% of early reentry illness episodes were due to failure to notify workers that a field was under a restricted entry interval. In the California Agricultural Workers' Health Survey conducted by an independent research institute, only 57% of farmworkers surveyed in seven California communities reported receiving pesticide safety training.

Poor enforcement of laws, most county agricultural commissioners still issue few fines

California county agricultural commissioners continue to issue few fines when violations are found, responding instead with letters of warning and violation notices. During fiscal year 2000–01, DPR issued only 520 fines statewide for

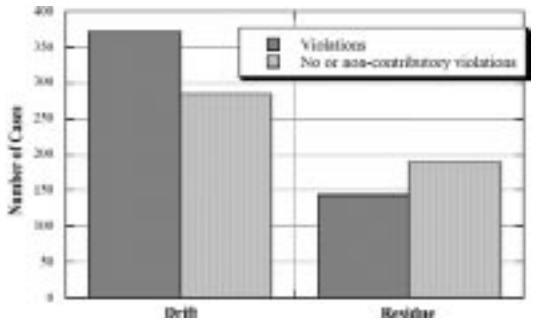

Figure I. Occurrence of Violations and Non-violations in Drift and Residue Poisoning Cases, 1998–2000

Source: California DPR PISP data 2002.

agricultural pesticide safety violations, along with 4,069 letters of warning or notices of violation (Figure II). Most fines ranged from $151 to $400, an amount DPR designates for moderate violations that pose a reasonable possibility of creating a health or environmental hazard or for repeat record keeping violations. The annual number of fines (Figure III) in the moderate and serious categories has remained relatively constant since *Fields of Poison,* but the number of fines for minor violations has dropped.

Better enforcement models exist, as the outcome of a mass metam-sodium poisoning case in Tulare County in November 1999 demonstrated. One hundred and fifty Earlimart residents were evacuated, 24 people were hospitalized, and countless others fled in their own vehicles or hid in their homes after vapors from a nearby field drifted into town. Residents continue to suffer from new and exacerbated cases of asthma and other respiratory illnesses. Persistent Earlimart residents and the United Farm Workers Union forced the pesticide application company to pay a $75,000 fine and put another $75,000 into trust funds to pay victims' medical bills. Tulare County also adopted stricter controls for metam-sodium applications. However, implementation has been imperfect. Victims waited long months for Wilbur Ellis to pay their medical bills and Tulare County controls remain weaker than those Santa Barbara and San Luis Obispo counties adopted after a metam-sodium incident in Santa Barbara County.

Figure II. Statewide Pesticide Enforcement Actions, FY 2000/2001
Source: DPR 2002a.

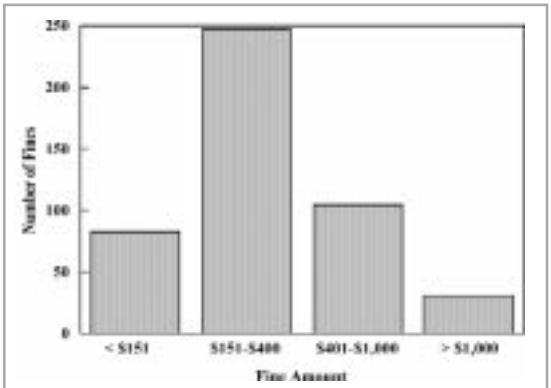

Figure III. Statewide Fines 2000
Source: DPR Enforcement Database 2000.

Recommendations: Urgent need for safer agriculture and better worker protections

Use of hazardous pesticides and inadequate regulations continue to seriously threaten California farmworker health and wellbeing. Only the elimination of hazardous pesticides and their replacement with safer, less toxic pest management tools is a sustainable solution to agricultural chemical exposure. Persistent effort to reduce and eliminate use of hazardous pesticides through development and implementation of ecologically sustainable production methods is the cornerstone for reducing the burden of acute and chronic pesticide illness.

DPR and county agricultural commissioners share responsibility for regulating agricultural pesticide use in California. DPR's evaluation of enforcement program weaknesses is a good first step, but progress towards more effective enforcement has been slow. Now is the time to move beyond studying the problem and start acting. We call upon DPR and the county agricultural commissioners to:

1. **Eliminate use of the most hazardous pesticides to reduce the problem of immediate and chronic pesticide poisoning at the source.**
   Initial targets for elimination should include a) fumigants and other highly toxic pesticides, and b) pesticides that degrade slowly, leaving residues on crops that pose long-term risks for workers and their families.
2. **Actively promote safe and sustainable alternatives.**
   To move California toward a more sustainable, healthy, and humane agricultural system, we urge DPR and other state agencies to actively promote implementation of safe and sustainable pest management alternatives.

3. **Reduce pesticide drift through improved regulations.**
   Two immediate goals include a) phaseout of aerial application, fumigation, and other drift-prone application methods, especially for Bad Actor pesticides, and b) buffer zones around fields being treated to protect fieldworkers in nearby fields, children at school, and other community members.

4. **Reduce exposure to pesticide residue.**
   Residue exposure occurs when field reentry intervals are too short or when workers are not properly notified of applications. Some intervals must be dramatically lengthened and DPR should support regulations requiring warning signs around all fields before pesticide applications to supplement existing requirements for oral warnings.

5. **Strengthen enforcement of existing laws.**
   Significant fines are needed to a) motivate growers and pesticide application companies to obey the law and b) show workers that their reports of violations will secure serious prosecution of perpetrators and bring health care and compensation to victims. Counties must issue fines for all pesticide safety violations and DPR must improve county enforcement and raise maximum fine levels.

   A state program should be created to cover medical expenses due to non-work-related exposure to agricultural pesticides, funded by offenders. The Earlimart (Tulare County) settlement should serve as a model.

6. **Improve farmworker access to pesticide information and healthcare.**
   DPR should prioritize improved farmworker training and the access to pesticide spray records that worker safety and right-to-know regulations require.

7. **Improve pesticide incident investigation.**
   Counties must improve the quality and utility of pesticide incident investigations and collect complete information in a manner that protects workers from retaliation.

8. **Improve pesticide illness reporting.**
   State and county agencies should work together to reduce delays and gaps in pesticide illness reporting and expand existing programs to train doctors in pesticide illness diagnosis, treatment, and reporting requirements.

9. **Reduce pesticide exposure among children through better childcare and housing.**
   Inadequate housing and childcare are underlying causes of excessive pesticide exposure of farmworker children in California and nationwide. Both employers and government agencies must invest substantially more in improved housing and childcare so farmworkers can follow recommendations to bathe after pesticide exposure and keep children out of fields.