

# Protect Farmworkers From Pesticide Poisonings

Neurotoxic pesticides, called organophosphates (“OPs”), poison farmworkers, adversely impact farmworker children and communities, kill fish and wildlife, and contaminate our environment. EPA can only register a pesticide for use in the United States if it will not “cause unreasonable adverse effects on the environment.”<sup>15</sup> EPA re-registered azinphos-mythl (“AZM”) and phosmet, two highly toxic OPs, despite unacceptable risks to farmworkers, communities, and the environment.<sup>9,11,12</sup> Farmworkers sued to force EPA to consider the magnitude of the injuries caused by these poisons.

## Poisoning Farmworkers and Their Communities

About four million farmworkers and their children live in the United States.<sup>39</sup> Migrant and seasonal farmworkers, their families, and communities live where pesticides drift and settle, touch and wear contaminated clothing, and eat tainted food.<sup>6,7,16,18,19</sup> Children are especially at risk because they eat more food, drink more water, and breath more air per unit of body weight than adults.<sup>18,26</sup> Kids as young as six years old work in fields, and others accompany parents to work.<sup>16,17,18,19</sup>

- ◆ OPs, derived from nerve agents developed during World War II, attack the human nervous system. They are among the most powerful toxins routinely used in the United States.<sup>13</sup>
- ◆ Exposure can cause dizziness, vomiting, seizures, paralysis, loss of mental function, and death.<sup>11,12,13,37,35,38</sup>
- ◆ Farmworker communities are exposed to OPs through “take-home” exposures on clothing and cars, and these dangerous poisons drift and settle in houses, play areas, and communal spaces.<sup>6,7,18,19,24</sup>
- ◆ A study of dust samples found AZM residue in 85% of farmworker homes in an agricultural area of WA. The study also found high levels of AZM byproducts in the bodies of farmworker children in these homes.<sup>7</sup>
- ◆ Farmworker children who live within one-quarter mile of fields have four to five times more chemicals in their bodies from exposure to OPs, including AZM, than other individuals.<sup>6</sup>

## EPA Fails to Protect Farmworkers From Poisonings

When approving pesticides for use, federal law requires EPA to register a pesticide for use only if it will not cause unreasonable adverse effects on the environment.<sup>15</sup> In 2001, EPA authorized the use of AZM and phosmet knowing that these chemicals can poison workers, yet the agency failed to consider the magnitude of such poisonings or the associated impacts on families and communities.<sup>9,11,12</sup> EPA’s 2001 re-registration decisions approving AZM and phosmet for use:<sup>9,11,12</sup>

- ◆ Failed to determine the number of men, women, and children that their decision puts at risk of being poisoned.
- ◆ Disregarded the adverse effects of AZM and phosmet on children who accompany parents in fields.
- ◆ Relied on industry-supplied information to estimate worker exposure levels, but ignored a federal law requiring that EPA allow public scrutiny of such information.
- ◆ Allowed unacceptable risks to farmworkers exposed to AZM and phosmet when mixing, loading, and applying these pesticides or touching plants when reentering recently sprayed areas to thin or harvest crops. (Table 1)

Table 1 Weeks of Dangerous Exposure to AZM <sup>9,11</sup>						
CROPS	Activity	Safety Level**	Weeks of Unsafe Exposure	Activity	Safety Level**	Weeks of Unsafe Exposure
		<100 = Unsafe			<100 = Unsafe	
Apples	Thinning	1	13	Harvesting	2	13
Almonds	Pruning	3	11	Harvesting	Unknown	
Blueberries	Thinning	3*	22	Harvesting	<1	22
Cherries	Thinning	No Hand Thinning Allowed		Harvesting	2.9	10
Pears	Thinning	2.1	13	Harvesting	1.9	12
Walnuts	Pruning	3	11	Harvesting	Unknown	

**Methodology:** Safety levels are based on EPA’s risk estimates for a worker who conducts a specific activity in an area where AZM was applied. The number of weeks of unsafe exposure is based on the total number of days that EPA allows a worker to conduct activities when levels of exposure to AZM are unsafe, starting on the day that EPA allows a worker to conduct an activity where AZM was applied and ending on the day that it is safe to conduct the activity.

\* EPA calculated this safety level for the listed activity four days after reentry. However, EPA subsequently increased the number of days required before reentry (from 4 to 7), but did not recalculate the safety level.

\*\* The “Safety Level” reflects the EPA-derived margin of exposure (“MOE”) to AZM. EPA considers risks unsafe when the MOE for an activity is less than 100.

## Pesticide Poisonings & Agriculture: A Substantial—Yet Underreported—Problem

EPA's refusal to eliminate the use of dangerous and unnecessary pesticides results in significant incidents of poisonings.<sup>9,11,12</sup> EPA estimates between 10,000 and 20,000 incidents of pesticide illness per year from farm work.<sup>18</sup> However, EPA acknowledges this estimate is based on severe underreporting of illnesses.<sup>18</sup> Data from WA, OR, and CA demonstrate that agricultural pesticide use is a major cause of poisonings.<sup>2,27,43</sup> Yet, due to inadequate tracking systems and enforcement, the problem is likely much greater than current data indicate.<sup>2,16,17,18,24,27,36,43,44</sup>

### Washington State Pesticide Incident Information

- ◆ In 2001, individuals reported 200 pesticide-poisoning incidents involving 250 people. Agricultural activities accounted for 54%, or 107 incidents reported.<sup>43</sup>
- ◆ In 2001, AZM was the 4<sup>th</sup> most often reported pesticide associated with complaints.<sup>43</sup>
- ◆ Washington's preliminary data analysis projected increases in the number of pesticide poisoning incidents of 39% in 2002 and 54% in 2003.<sup>43</sup>
- ◆ Of the farmworkers surveyed by the Washington Dept. of Health in 2003, 75% reported symptoms from on-the-job exposures.<sup>44</sup> The survey also found that workers often do not seek care for symptoms out of fear of employer reprisals and a belief that doctors downplay symptoms due to state and employer pressure.<sup>44</sup> Few workers reported getting any pesticide training or information.<sup>44</sup>

### Washington's Medical Monitoring Program

Spurred by a petition from farmworker advocates, and mandated by the Washington Supreme Court after years of delay and stonewalling, Washington established medical monitoring of farmworkers who regularly handle dangerous pesticides.<sup>45</sup> The program began during the 2004 growing season. It covers workers who mix, load, and apply OPs and carbamates, both of which suppress an essential enzyme that controls nerve impulses. In the first year of monitoring, one in five workers had been exposed to pesticides at levels that significantly interfered with normal nervous system functioning.<sup>46</sup>

### California State Pesticide Incident Information

- ◆ In 2001, California investigated 979 poisoning incidents and determined that 616 incidents were linked to pesticide use. Agricultural activities accounted for 31%, or 192 incidents.<sup>2</sup>
- ◆ From 1998 to 2000, 51% of pesticide poisoning incidents occurred when pesticides drifted from the application site onto workers.<sup>24</sup>

### Oregon State Pesticide Incident Information<sup>27</sup>

- ◆ In 2001, Oregon had 213 reported poisoning incidents, and sufficient information to confirm 71 poisonings.
- ◆ Of the 71 incidents, 64 illnesses were reported due to agricultural pesticide applications.

### No National Tracking Program, Inadequate State Systems, & Underreported Illnesses

- ◆ There is no national tracking system for pesticide poisonings.<sup>18,36</sup>
- ◆ California, Oregon, and Washington are all concerned that their tracking systems underreport poisonings.<sup>2,27,43</sup>
- ◆ The federal government acknowledges that incidents of pesticide poisonings, including of children, are likely underestimated.<sup>18</sup>

The agricultural industry annually applies about 60 million pounds of OPs to 60 million acres of land in the U.S.<sup>13</sup> States across the nation have agricultural uses that apply large quantities of AZM and phosmet.<sup>11,12,34</sup>

- ◆ In 2001, growers applied over 1.5 million pounds of AZM and phosmet.<sup>34</sup>
- ◆ AZM and phosmet are registered for use on 38 crops, including 36 food crops and 2 other uses.<sup>9,11,12</sup>
- ◆ Growers in WA, OR, and CA use about 51% of all AZM and 48% of all phosmet used by the agricultural industry.<sup>34</sup>

## Largest Crop Uses of AZM and Phosmet, 2001<sup>34</sup>

Largest Uses Of AZM and Phosmet				Largest Uses of AZM		Largest Uses of Phosmet	
Crop	Total Lbs.	Phosmet	AZM	Crop	Lbs. AZM	Crop	Lbs. Phosmet
1. Apples	865,400	398,300	467,100	1. Apples	467,100	1. Apples	398,300
2. Peaches	299,900	249,500	50,400	2. Cherries	68,000	2. Peaches	249,500
3. Pears	133,900	83,400	50,500	3. Pears	50,500	3. Pears	83,400
4. Cherries	104,800	36,800	68,000	4. Peaches	50,400	4. Nectarines	51,100
5. Nectarines	54,500	51,100	3,400	5. Blueberries	12,800	5. Cherries	36,800

## States with Highest Use of AZM and Phosmet, 2001<sup>34</sup>

Top 10 States With Largest Uses of Phosmet				Top 10 States With Largest Uses of AZM			
State	Lbs. Phosmet	State	Lbs. Phosmet	State	Lbs. AZM	State	Lbs. AZM
1. CA	227,4000	6. SC	61,900	1. WA	285,800	6. CA	21,800
2. MI	179,300	7. OR	42,200	2. MI	154,500	7. SC	20,800
3. WA	168,200	8. PA	23,400	3. NY	72,600	8. OR	17,600
4. GA	101,600	9. NJ	15,400	4. PA	29,300	9. NC	7,700
5. NY	68,800	10. NC	11,700	5. NJ	25,500	10. KS	900

## Threatening Fish, Wildlife, and Environmental Quality

AZM and phosmet can kill fish, poison wildlife, kill and injure beneficial insects, and contaminate water supplies.<sup>11,12</sup>

- ◆ AZM and phosmet can poison wildlife, including endangered and threatened species.<sup>11,12</sup>
- ◆ EPA incident reports demonstrate that AZM has more recorded incidents of adversely impacting aquatic life than any other pesticide.<sup>11</sup>
- ◆ USGS data show that AZM is one of the pesticides that most commonly exceed aquatic safety levels in our nation's surface waters, including the Northwest.<sup>20,41,42</sup>
- ◆ AZM can contaminate groundwater aquifers in areas with porous bedrock.<sup>11</sup> Fifty percent of the nation relies on groundwater for drinking water, and 40% of such groundwater comes from aquifers in porous bedrock.<sup>40</sup>
- ◆ AZM and phosmet are toxic to beneficial insects, such as honeybees, that assist agricultural production.<sup>11,12,37</sup>

## EPA Failed to Fully Consider Alternatives to AZM and Phosmet

EPA disregarded peer-reviewed studies that non-chemical and low-use pesticide alternatives are effective in reducing insect damage to produce.<sup>3,5,14,21,23,28,29,30,32</sup> Ignoring this data, EPA assumed that AZM and phosmet provide unrivaled benefits to agriculture, and justified continuing unsafe exposures and environmental harm from these poisons.<sup>9,10,11,12</sup>

- ◆ Pheromone mating disruption ("PMD") reduces insect numbers by filling the air with pheromones, which the pests use to attract mates, thus inhibiting breeding.<sup>1,8,10,21,32</sup> Kaolin clay reduces some pests' ability to detect and eat crops.<sup>10</sup>
- ◆ Studies in WA, CA, OR, and MI confirm that PMD and kaolin clay can reduce insect damage, promote beneficial insects, lower or eliminate OPs use, and maintain the yield and quality of apples.<sup>1,3,4,8,20,21,22,23,25,28,29,30,32</sup>
- ◆ Studies found increased grower acceptance and cost-savings after three years of using PMD, but EPA ignored these findings by limiting its analysis of alternatives to two years.<sup>1,10</sup>

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