

# Agricultural Pesticides Are Dangerous for You, Your Family, and Your Neighbors

## Health Effects Associated with Pesticides

**Asthma.** Pesticide exposure can both cause asthma and make it worse. The Association of Occupational and Environmental Clinics lists organophosphorus and carbamate insecticides, fumigants like methyl bromide and MITC, and many herbicides like 2,4-D and atrazine as compounds that can cause asthma.

**Cancer.** Farmers appear to experience elevated rates for several cancers: leukemia, non-Hodgkin's lymphoma, multiple myeloma, soft-tissue sarcoma, and cancers of the skin, lip, stomach, brain, and prostate.

**Prostate Cancer.** Prostate cancer is higher among farm workers with higher levels of organochlorine pesticides (lindane and heptachlor), organophosphate pesticides (dichlorvos), fumigants (methyl bromide), or triazine herbicides (simazine) compared to workers with lower levels.

**Lung Cancer.** Lung cancer has been shown to be higher among pesticide applicators exposed to chlorpyrifos (Dursban).

**Childhood Cancer.** Pesticides are a risk factor for several types of cancer in children. Risk factors include parents' home use, which can increase the risk of leukemia by 11 times and brain cancer by ten times. Living on a farm increases the risk of bone cancer and leukemia, and having parents who are farmers or farmworkers increases a child's risk of bone cancer, brain cancer, soft tissue sarcoma, and Wilm's tumor.

**Nervous System Disorders.** In one study pesticide applicators were 2.5 times more likely to have neurological symptoms (symptoms affecting the nervous system) associated with pesticides than non-applicators.

**Parkinson's Disease.** Strong evidence links Parkinson's disease to pesticide exposure. Most studies are of work-related exposures to herbicides. There is also evidence of increased risk of Parkinson's from exposure to pesticides in the home, living in a rural area, and using well water.

**Birth Defects.** Children born to women who live in a high pesticide use area while pregnant have an increased risk of various birth defects, including cleft lip/palate, limb reduction defects and neural tube defects.

**Low Sperm Counts.** A 1992 study documented a 40% decline in sperm count worldwide over the past 50 years. Some studies have linked pesticide exposure with decreased sperm quality and number. The list of associated pesticides includes widely used carbamates such as aldicarb and carbaryl and common organophosphorus pesticides.

**Roundup Toxicity.** Although the glyphosate-based herbicide Roundup is generally thought to be less toxic to the ecosystem than other pesticides, concerns about its effects on human reproduction persist. In one study, exposure of male farmers to glyphosate-based herbicides was associated with an increase in miscarriage and premature birth in farm families.



Sources: 1) Blair, A and SH Zahm. 1995. *Env Hlth Persp* 103(Suppl 8):00-00. 2) Bonn, D. 2005. *Env Hlth Pers* 113:716-720 (2005). 3) Hunting, K and S McDonald. 2006. *Assoc Occup & Env Clinics* (<http://www.aoc.org/aoccode.htm>). 4) Kamel, F, et al. 2005. *Env Hlth Persp* 113:877-882. 5) Lee WJ, et al. 2004. *Natl Cancer Inst.* 2004 Dec 1;96(23):1781-9. 6) Mills, PK and R Yang. 2003. *J Occup Environ Med.* 45(3):249-58. 7) Schafer, K, et al. 2004. *Chemical Trespass: Pesticides in our bodies and corporate accountability.* Pesticide Action Network, San Francisco, CA.

# Recent Pesticide Exposure Incidents

(Summary with excerpts, *Bakersfield Californian*, September 18, 2005, Page A8)

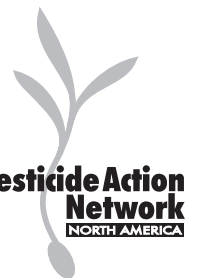
Following are some recent high-profile pesticide exposure incidents in California's Central Valley. Most pesticide exposures aren't reported, but these got the attention of regulators, the media, or both.

- **Earlimart, November 1999** At least 170 Tulare county residents were exposed to metam-sodium, a carcinogen and reproductive toxin. The company responsible paid a \$150,000 fine.
- **Terra Bella, June 2000** "Twenty-four women working in a Tulare County vineyard were sent to the hospital with complaints of nausea, eye irritation and sore throats, saying a helicopter sprayed them with pesticides being applied to an adjacent field." Investigators found traces of pesticides on the women's clothing and fined the pilot and his employer.
- **Arvin, June 2002** The state fined a company \$15,000 for exposing 137 vineyard workers to metam-sodium applied to a nearby field.
- **Arvin, July 2002** "More than 250 residents were sickened by drifted metam-sodium. The applicator ... agreed to pay \$50,000 in fines to the state and \$10,000 to reimburse Kern County for investigating the incident."
- **Lamont, Oct. 3, 2003** "Roughly 40 people living near Weedpatch Highway and Sunset Boulevard felt sick with headaches, vomiting, burning eyes and other symptoms. They called 911, but when emergency responders arrived the smell of the soil fumigant chloropicrin had dissipated and victims were told to go home."
- **Lamont, Oct. 4, 2003** The same neighborhood was hit with another gust of chloropicrin sickening more than 100 people. This time the incident got the attention of pesticide regulators. After an investigation the company responsible paid \$75,500 in fines, and was suspended from operating in Kern for 60 days.
- **Arvin, May 2004** "Nineteen farm workers were exposed to a highly toxic insecticide, methamidophos, sending them coughing, gagging, vomiting and, in some cases, losing consciousness. Thirteen workers went to the hospital." Kern's District Attorney's office is handling the case against the Bakersfield pesticide applicator accused of illegally handling the pesticide.
- **Arvin, May 2005** Twenty-three female workers were taken to the hospital for exposure to the insecticide Baythroid 2, a skin and eye irritant. Four men were also exposed. Kern's District Attorney's office assessed a \$75,000 fine which is being appealed by the pesticide application company.
- **Shafter, May 2005** "A cloud of fertilizer hit a backyard birthday party and nearby homes, affecting 24 people. The fertilizer was determined to be low toxicity, and the agricultural commissioner did not investigate because fertilizers are not in his jurisdiction."
- **Shafter, July 2005** Three oil employees working near an almond orchard were allegedly sprayed with pesticides from a plane. The agricultural commissioner's investigated the case. At the time of preparing this summary we did not know the outcome.
- **Mettler, August 2005** Drift from a metam sodium sprinkler application affected at least 42 workers in an adjacent vineyard and one of these workers went on to develop a serious form of pneumonia. Kern County fined the grower who applied the metam sodium \$23,500 for application safety violations.
- **Patterson, September 2005** A woman was in her yard when she felt drenched with the insecticides dimethoate and cyhalothrin from a helicopter application to a bordering field. She was taken to the hospital and treated for breathing difficulties and organophosphate poisoning and continues to have respiratory problems. Stanislaus County investigated and issued a \$5,000 fine which was upheld by the Superior Court. The applicator has appealed this ruling.
- **Tulare, May 2006** Three people were exposed to the insecticide chlorpyrifos when it drifted over their property from a nearby walnut orchard. A licensed pesticide applicator is facing possible civil penalties.



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