

Diazinon Fact Sheet

Diazinon is an organophosphate insecticide that originates from nerve gases the Nazis developed during World War II. Exposure to diazinon impairs neurological functioning and is associated with illnesses ranging from pancreatitis to cancer. Since 1956, diazinon has been used to kill insects on fruit, vegetable, and field crops in the United States. As a result, farmworkers are exposed to diazinon in the fields; children are exposed to diazinon in air, drinking water, and food; and wildlife is exposed to diazinon that contaminates the environment.

Diazinon is toxic to both humans and wildlife:

- Exposure to diazinon can result a neurological impairment called cholinesterase inhibition. Symptoms include muscle spasms, confusion, dizziness, seizures, vomiting, diarrhea, coma, and death.¹
- Diazinon exposure is associated with damage to the liver and pancreas,² diabetes,³ and non-Hodgkins lymphoma (a form of cancer).⁴
- Babies exposed to organophosphates such as diazinon before birth exhibit a shorter gestation period, smaller birth weight, shorter length, decreased head circumference, and delay in neurodevelopment.⁵

Farmworkers are exposed to dangerous levels of diazinon in the fields:

- EPA has identified at least 118 different agricultural scenarios that put farmworkers at risk of overexposure to diazinon.⁶
- Even when farmworkers wear respirators and other protective equipment they can still be exposed to unacceptable levels of diazinon in the fields.⁷
- Diazinon is so toxic that it takes up to 18 days before EPA allows farmworkers to re-enter fields following application and up to 45 days before EPA allows farmworkers to harvest treated crops.⁸

Children in agricultural communities are poisoned by diazinon:

- After application in the fields, diazinon can become airborne and drift into nearby homes, schools, and playgrounds.⁹
- Air monitoring in Florida and California has detected diazinon in agricultural communities at levels exceeding what EPA considers acceptable for young children.¹⁰
- Infants and children are especially susceptible to diazinon because they have not fully developed the enzyme necessary to protect the brain from organophosphate poisoning.¹¹

Diazinon kills birds and fish:

- Diazinon has been linked to hundreds of bird kills and has caused the second largest number of known incidents of bird mortality of any pesticide.¹²
- Diazinon is the most frequently detected insecticide in surface water monitoring studies and is considered to be very highly toxic to freshwater fish.¹³

- When salmon and steelhead are exposed to minute concentrations of diazinon in rivers and streams, their olfaction is inhibited, resulting in impaired homing ability, reproduction, and predator avoidance.¹⁴
- In 1989, the U.S. Fish and Wildlife Service determined that diazinon jeopardized 84 threatened and endangered aquatic species and four listed avian species.¹⁵

EPA allows diazinon uses to continue:

- Under the federal pesticide law, pesticides may not be used in the United States unless they are registered for a particular use.¹⁶ Diazinon was originally registered in 1956, before Congress had adopted environmental and health standards for the regulation of pesticides. EPA “reregistered” diazinon on July 31, 2002.
- In 2004, EPA cancelled residential uses of diazinon due to the extreme risks that diazinon poses to children. However, in 2006, EPA re-affirmed its decision to allow continued agricultural use of diazinon.¹⁷
- Diazinon is currently registered for use on a wide variety of crops including almonds, apples, apricots, beets, beans, blueberries, broccoli, Brussels sprouts, cabbage, caneberries, carrots, cauliflower, celery, chard, cherries, collards, cranberries, cucumbers, endive, figs, filberts, ginseng, kale, lettuce, melons, mustard greens, nectarines, onions, ornamentals, parsley, parsnips, peaches, pears, peas, peppers, pineapples, plums, potatoes, prunes, radishes, rutabagas, strawberries, spinach, tomatoes, trunk wraps, turnips, and watercress.¹⁸

¹ U.S. Environmental Protection Agency, *Diazinon IRED Facts*, at 2 (2004).

² Gokcimena et al., *Effects of diazinon at different doses on rat liver and pancreas tissues*, *Pesticide Biochemistry and Physiology* 87: 2, at 103-108 (2007).

³ Montgomery et al., *Incident Diabetes and Pesticide Exposure Among Licensed Pesticide Applicators: Agricultural Health Study, 1993–2003*, *American Journal of Epidemiology* 167(10), at 1235–1246 (2008).

⁴ Cantor et. al., *Pesticides and other risk factors for non-Hodgkin’s Lymphoma among men in Iowa and Minnesota*, *Cancer Research* 52, at 2447-2455 (1992); Zahm et. al., *A case-control study on non-Hodgkin’s lymphoma and agricultural factors in Eastern Nebraska*, *American Journal of Epidemiology* 128, at 901 (1988).

⁵ U.S. Environmental Protection Agency, *A Decade of Children’s Environmental Health Research*, at 6 (2007).

⁶ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 19-21 (2002).

⁷ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 17 (2002).

⁸ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 22-23 (2002).

⁹ Harnly et al., *Correlating Agricultural Use of Organophosphates with Outdoor Air Concentrations: A Particular Concern for Children*, *Environ. Health Perspect.* 113, at 1184-1189 (2005).

¹⁰ Tupper et al., *Pesticide Action Network North America, Air Monitoring in Hastings, Florida, December 6-14, 2006: Technical Report*, at 20 (2007); Kegley et al., *Californians for Pesticide Reform, Secondhand Pesticides: Airborne Pesticide Drift in California*, at 3 (2003).

¹¹ U.S. Environmental Protection Agency, *A Decade of Children’s Environmental Health Research*, at 10-11 (2007).

¹² U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 31 (2002).

¹³ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 11, 30 (2002).

¹⁴ Scholz et al., *Diazinon disrupts antipredator and homing behaviors in chinook salmon (*Oncorhynchus tshawytscha*)*, *Can. J. Fish. Aquat. Sci.*, 57, at 1911-1918 (2000); Moore and Waring, *Sublethal effects of the pesticide diazinon on the olfactory function in mature male Atlantic salmon parr.*, *J. Fish Biol.* 48, at 758-775 (1996).

¹⁵ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 31 (2002).

¹⁶ 7 U.S.C. § 136a(a).

¹⁷ U.S. EPA, *Diazinon Re-registration Eligibility Decision*, at 1-2 (2006).

¹⁸ U.S. Environmental Protection Agency, *Diazinon Interim Reregistration Eligibility Decision*, at 51-67 (2002).