

Health Concerns of Atrazine in Ground Water



What is Atrazine?

Atrazine is an herbicide that is used to control broad leaf and grassy weeds. Atrazine is primarily used on corn, but is also registered for use in Idaho on wheat stubble and fallow fields, turf, conifers, and non-crop applications such as roadsides and right-of-ways.

How might I be exposed to Atrazine?

Most people are not exposed to atrazine on a regular basis. It is rarely found in food samples, and when it has been found, it has been detected at very low levels.¹ Farm workers, pesticide applicators, and people who work in factories that produce atrazine may be exposed. In addition, people who handle soil that contains atrazine may be exposed. People may also be exposed by drinking water that is contaminated with atrazine or by preparing food using this drinking water.

What are the health effects from exposure to atrazine?

Several studies have indicated that exposure to a high dose of atrazine could potentially affect pregnant women by causing their babies to grow slower than normal or causing premature birth.¹

Exposure to a high dose of atrazine has caused liver, kidney, and heart damage in animals; however, it is unknown if this would also occur in humans.¹

It is believed that atrazine may cause hormone disruption in humans, or more specifically, cause reduced estrogen and prolactin production. The Environmental Protection Agency (EPA) maximum contaminant level (MCL) for drinking water is set at a lower level than is expected to cause this health effect in humans.²

EPA has classified atrazine as “not likely to be carcinogenic to humans.”² The International Agency for Research on Cancer (IARC) has

determined that there is inadequate evidence in humans to determine the carcinogenicity of atrazine and that atrazine is not classifiable as to its carcinogenicity to humans.³

How do I know if there is atrazine in my drinking water?

If you own your own private domestic well and live in an agricultural area, you should periodically test your water for various constituents, including atrazine. In general, it is a good idea to have your well water tested if you’ve had a repair or problem with your home’s plumbing, connections, or treatment system, or after installing a new well.

A certified analytical laboratory will test your water for a fee. You can find a laboratory by looking in the yellow pages under “Laboratories-Analytical” or “Water Analysis”. When you call the laboratory, they will give you specifics about the costs of the atrazine analysis and how to collect the water sample. If you have trouble finding a laboratory, contact the Idaho State Department of Agriculture, Water Program at 208-332-8500 for assistance.

Are there drinking water health standards for atrazine?

The EPA has set a Maximum Contaminant Level (MCL) for atrazine in drinking water at 3 micrograms per liter ($\mu\text{g/L}$) or 3 parts per billion. This level includes a margin of safety to protect human health and should be considered a guideline. The EPA believes that water containing atrazine at or below 3 $\mu\text{g/L}$ is acceptable for drinking every day over the course of one’s lifetime, and does not pose any health concerns. The ISDA suggests that you do not drink or prepare foods with water that contains more than 3 $\mu\text{g/L}$ of atrazine.

What actions should I take if my drinking water contains atrazine?

If atrazine was detected in your water at or below 3 µg/L, you should periodically retest your well. If atrazine was detected in your well at a level above 3 µg/L, ISDA recommends that you do not drink the water and find an alternative drinking water supply, such as bottled or filtered water. In addition, it is recommended that you do not prepare foods with the water if the atrazine concentration is greater than 3 µg/L. You should contact ISDA, your doctor, and/or your local health department to determine the best action to take.

There are many different types of water treatment technologies available. Activated carbon filters are the most commonly recommended and used treatment for organic chemicals, including atrazine.⁴ Activated carbon filters use charcoal to attract and absorb various chemicals, such as dirt, particles and organic chemicals such as pesticides, chlorine, and chloroform from water.

Water treatment systems can be found at many different places and for various costs depending on what level of protection you need or want. To purchase an activated carbon filter system for your whole house, you can find more information at NSF International's website: <http://www.nsf.org>. NSF International is a not-for-profit organization that certifies home water treatment systems.

Where can I get more information?

The following are sources for additional information and guidance:

- EPA Safe Drinking Water Hotline: (800) 426-4791.
- National Pesticide Information Center: (800) 858-7378; www.npic.orst.edu.
- Agency for Toxic Substances and Disease Registry: (888) 422-8737; www.atsdr.cdc.gov/

toxfaq.html.

- Idaho Department of Health and Welfare, Bureau of Community and Environmental Health: (208) 332-7328.
- Contact your local health district department.
- EPA Decision Documents for Atrazine: www.epa.gov/oppsrrd1/REDS/atrazine_combined_docs.pdf

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Photos on fact sheet from United States Geological Service drinking water website: <http://www.usgs.gov/themes/FS-047-97/>.

References

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2. Environmental Protection Agency. Interim Reregistration Eligibility Decision for Atrazine. Washington, DC: Office of Prevention, Pesticides, and Toxic Substances, 2003.
3. International Agency for Research on Cancer. Monographs on the Evaluation of Carcinogenic Risks to Humans: Atrazine. Volume 73. Geneva: World Health Organization, 1999.
4. Extension Toxicology Network. ExToxNet FAQs: Water Treatment. <http://extoxnet.orst.edu/faqs/safedrink/treat.htm>. Accessed: 5/16/06.

Idaho State Department of Agriculture Water Section Information

For more information about atrazine detections in the state of Idaho or any other agricultural ground water quality concerns, please contact a ground water staff member of the Idaho State Department of Agriculture Water Section:

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