

# Syngenta & Atrazine—A Controversial Weed Killer & Agribusiness Come Under Scrutiny

*Agribusiness and government have teamed up to block a close examination of the health and environmental impacts of this herbicide.*



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## A popular weed killer

Since it was first registered in 1958, Atrazine has become one of the most widely used corn herbicides in the U.S. Its relatively low cost and ability to kill broadleaf weeds without harming corn plants have made it popular with Midwestern farmers for decades. It is sprayed on about 75 percent of U.S. corn and sorghum acreage.<sup>1</sup> An estimated 76.4 million pounds of atrazine are applied annually. Usage on corn accounts for 86 percent of that total use.<sup>2</sup> Atrazine kills weeds on contact, and can also stay in the environment for several months after application, providing residual killing power that prevents weed seeds from germinating. Atrazine is one of the reasons Syngenta, its primary manufacturer, saw its profits rise 75 percent in 2008.<sup>3</sup>

Unfortunately, over the years atrazine has become a major environmental contaminant, and has been connected with health problems in humans, fish and amphibians. As a result, it is embroiled in a controversy over efforts on the part of government and the private sector to suppress regulation and research related to this herbicide.

## Atrazine a common contaminant

Atrazine is one of the most commonly detected pesticides in U.S. ground and surface water. A monitoring program conducted by the Environmental Protection Agency in 10 states between 2003 and 2005 found that 94 of 136 public water systems tested had atrazine concentrations above the three parts per billion federal drinking water standard in their untreated water for at least one 90-day period.<sup>4</sup> Between 1998 and 2003, seven million people were exposed to atrazine in their treated drinking water above state or federal health-based limits.<sup>5</sup>

The U.S. Geological Survey analyzed water samples from over 180 stream sites and 5,000 monitoring wells and found that atrazine was present in streams in agricultural areas about 80 percent of the time, and in groundwater in agricultural areas about 40 percent of the time.<sup>6</sup>

Because of its ability to be taken up into the atmosphere and travel hundreds of miles, atrazine has shown up in areas far from farm country, such as the Boundary Waters Canoe Wilderness Area in northern Minnesota. In fact, atrazine was detected in nine out of 10 lakes sampled recently in Minnesota.<sup>7</sup>

## A risk to the environment

Because atrazine is a type of herbicide that remains stable in the environment for a relatively long time—months, and in some cases, years—it poses a persistent risk to the environment and wildlife, particularly animals that spend a lot of time in the water. Research conducted by the University of California-Berkeley's Tyrone Hayes shows that exposing frogs to as little as 0.1 parts per billion of atrazine causes

severe health problems, including inducing a kind of chemical castration.<sup>8,9</sup> Atrazine's effects can be indirect: In 2008 scientists reported a correlation between high amounts of atrazine in Minnesota ponds and wetlands, and high populations of a type of flatworm that infects frogs.<sup>10</sup> A study released in May 2008 showed zebrafish exposed to atrazine for 48 hours at concentrations similar to what's found in water containing farm chemical runoff were twice as likely to be feminized.<sup>11</sup>

## A human health risk

There is mounting evidence that atrazine is an endocrine disrupter, a chemical that interrupts hormonal activity in animals, and possibly humans, causing severe problems at extremely low levels. Research has suggested a correlation between exposure to atrazine and low sperm quality among men, and that low levels of atrazine (two parts per billion) affect human cell development.<sup>12, 13</sup>

## Restricting its use

As a result of these concerns, use of the chemical has been restricted in some parts of the U.S. and around the world. In Wisconsin, widespread contamination of private wells by atrazine prompted officials there to adopt the "Atrazine Rule" in 1991. The rule limits how atrazine can be used in Wisconsin and prohibits its use in areas where atrazine contamination is found in groundwater above the federal standard of three parts per billion. There are now around 100 prohibition areas in the state covering more than 1.2 million acres. Among other things, the "Atrazine Rule" limits atrazine application rates between April 1 and July 31.<sup>14</sup> Studies since 1991 have shown that atrazine concentrations in Wisconsin wells has declined significantly. The Wisconsin Department of Agriculture, Trade and Consumer Protection updates its atrazine rules annually, based on existing regulatory standards and new groundwater test results.<sup>15, 16</sup>

Wisconsin's atrazine regulations are considered some of the most stringent in the Midwest. Iowa restricts atrazine application rates to half the federal label rate in around two-dozen counties. Minnesota has a program of voluntary use limitations when surface water or groundwater contamination exceeds a level of concern.<sup>17</sup>

Because of groundwater contamination problems and concerns about atrazine's impact on humans and wildlife, the Europe Union has declined to renew permitting of atrazine, in effect banning its use there. The U.S. EPA re-registered the pesticide in 2006, but during the registration process acknowledged there were concerns related to atrazine's effect on amphibians.<sup>18</sup>



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## Syngenta's bullying tactics

Syngenta, which is one of the largest agrichemical firms in the world, has gone to some extraordinary lengths to make sure their best-selling herbicide avoids even minimal regulation in this country. As the *Washington Post* described in a special report, a main reason the EPA has not restricted use of the herbicide is because a Washington, D.C., lobbyist named Jim J. Tozzi used the "Data Quality Act" to challenge the accuracy of studies showing problems with atrazine. The Data Quality Act, which was slipped into a 2000 omnibus spending bill without debate or comment, has been used primarily by industry to challenge the basis for regulations. Conveniently, Tozzi, who has worked closely with Syngenta, drafted the Data Quality Act himself.

In closed meetings that excluded independent scientists and environmental groups, officials with Syngenta and the EPA worked out an agreement to avoid tighter regulations of atrazine, according to the *Washington Post*.<sup>19</sup>

In addition, CropLife, a lobbying group that represents chemical companies like Syngenta, recently pushed for an amendment to the 2008 Farm Bill that would have prevented conservation money from going to state programs that help farmers transition from atrazine to a less toxic herbicide. The amendment eventually failed.<sup>20</sup>

## A suppression of science

Tyrone Hayes, a respected endocrinologist at the University of California-Berkeley, was originally hired by Syngenta to review studies related to atrazine. Hayes and Syngenta parted company when his research showed that the herbicide had severe health impacts on frogs. Officials from the company personally attacked Hayes and questioned the integrity of his research. In 2004, Hayes was dis-invited from giving a keynote at a Minnesota Pollution Control Agency conference after concerns were raised his presentation on atrazine research would offend Minnesota Department of Agriculture (MDA) officials.<sup>21</sup>

In Minnesota, hydrologist Paul Wotzka discovered the dangers of studying atrazine the hard way. For 16 years, Wotzka was a highly-respected hydrologist working for the state, doing cutting-edge research on pesticides such as atrazine. His research showed that atrazine levels were rising in places like the middle branch of the Whitewater River in southeast Minn., despite claims by the MDA that voluntary efforts to reduce atrazine applications in vulnerable areas were working.

In March 2007, Wotzka was asked to testify before a legislative committee about his research. When he sought permission to testify, his supervisors turned him down. On May 8, 2007, the hydrologist was fired. In the spring of 2007, Wotzka filed a federal whistleblower lawsuit, claiming that his First Amendment right to free speech had been violated.<sup>22</sup>

## What you can do

- The Land Stewardship Project will be working during upcoming legislative sessions to promote more policies that further study and regulate this controversial herbicide. Contact our Policy Program at 612-722-6377 or [bking@landstewardshipproject.org](mailto:bking@landstewardshipproject.org) for more information on how you can help.

- If you are a farmer who uses herbicides on corn, see LSP Fact Sheet No. 18 for details on how to reduce or eliminate atrazine use.

## Sources

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<sup>14</sup> Clearinghouse Rule 04-094. State of Wisconsin. 2005. [www.legis.state.wi.us/cr\\_finale/04-094.pdf](http://www.legis.state.wi.us/cr_finale/04-094.pdf)

<sup>15</sup> Bruce D. Rheineck. "Can Atrazine Use Return to Prohibition Areas?" Wisconsin Department of Agriculture, Trade and Consumer Protection. [www.soils.wisc.edu/extension/FAPM/proceedings/4B.rheineck.PDF](http://www.soils.wisc.edu/extension/FAPM/proceedings/4B.rheineck.PDF)

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*This fact sheet is brought to you by the members and staff of the Land Stewardship Project, a private, nonprofit organization devoted to fostering an ethic of stewardship for farmland and to seeing more successful farmers on the land raising crops and livestock. For more information, call 612-722-6377 or visit [www.landstewardshipproject.org](http://www.landstewardshipproject.org).*