

Syngenta Crop Protection

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**company position****Weight of evidence supports safety and economic benefits of atrazine**

- Growing body of research shows no effects on amphibians.
- Atrazine passes the most stringent, up-to-date safety requirements in the world.
- The U.S. Environmental Protection Agency (EPA) re-registered atrazine in 2006, based on the overwhelming evidence of safety from nearly 6,000 studies.

Greensboro, N.C., USA, March 2, 2010—Based on the weight of evidence of more than 6,000 studies, scientists around the world have shown that [atrazine](#) is safe to use – providing farmers an important tool to bring us safe, abundant and nutritious food.

A recent study on frog development runs counter to the vast majority of scientific opinion, which shows atrazine has [no effect](#) on amphibian development. After a [comprehensive study](#) in 2007, regulators and credible scientists agreed that atrazine is safe to frogs at levels that appear in the environment.

The EPA, the Australian government, and the World Health Organization have all looked at atrazine's effects on endocrine systems and given atrazine a clean bill of health.

Most recently, the State of Minnesota conducted a thorough review of atrazine, and in a January [announcement](#) said, "The review finds that atrazine regulations protect human health and the environment in Minnesota."

Atrazine is critical for family farms

The EPA [estimates](#) the loss of atrazine would cost corn growers \$28 an acre in lost yields and substitutes, and the total negative impact on corn, sorghum and sugar cane growers in the U.S. would exceed \$2 billion per year.

All studies are not created equal

The soundness of a scientific study hinges on its transparency and reproducibility. Do its procedures and results stand up to review by independent scientific peers and regulatory agencies? Can the study be reproduced with the same findings? This approach safeguards the scientific community, regulators, industry and the public from questionable results.

In [testimony](#) before the Agriculture and Rural Development Committee of the Minnesota House of Representatives (February 16, 2005), Anne E. Lindsay, former deputy director, Office of Pesticide Programs, US Environmental Protection

Agency, detailed the elaborate and meticulous scientific process required for pesticide registration.

She described at length the painstaking process EPA followed before recommending the re-registration of atrazine for use in American agriculture. She noted that EPA "reaches its conclusions through a systematic, objective evaluation of all relevant information. She noted that each step of the process uses scientifically peer-reviewed, documented procedures."

Lindsay testified that EPA looks "closely at every study to determine whether the results are scientifically sound," and that it insists on record retention and full data reporting. She stated that to review these studies, EPA follows "published, peer-reviewed Standard Evaluation Procedures."

Despite EPA's diligent investigative process, a legal and political attack has been launched against atrazine, relying on a handful of studies which, by objective scientific standards, offer questionable conclusions.

Regarding comments on frogs and atrazine

A new set of observations released yesterday in *Proceedings of the National Academy of Sciences* claims effects of atrazine on amphibian development but raises questions about the integrity of the assessments' experimental design.

The [study](#) has many shortcomings that undercut its usefulness, including its inconsistency with prior findings by the author. Two other in particular are: 1) the use of only one dose level of atrazine, when almost all studies used to assess the effects of substances for regulatory purposes are conducted at more than one concentration to validate when and if a predicted response happens consistently and; 2) the failure to use a positive control – a basic requirement of this kind of study. Positive controls confirm that the procedure is competent in observing the effect.

One study among many

For 50 years, atrazine has been used safely in agriculture with no effect to amphibians, fish, birds and other wildlife at concentrations found in the environment—a fact that is supported by numerous scientific studies.

Several recent studies add to the collection of 6,000-plus that support atrazine's safety to amphibians. Technical experts can review the following:

- Kloas W, I Lutz , T Springer , H Krueger , J Wolf , L Holden and A Hosmer. Does Atrazine Induce Gonadal Feminization in *Xenopus laevis*?, *Toxicol. Sci.* 2009, 107(2) 376-384.
- USEPA White Paper on the Potential for Atrazine to Affect Amphibian Gonadal Development. Submitted to the FIFRA Scientific Advisory Panel for Review and Comment October 9-12, 2007.
- Oka, T., Tooi, O., Mitsui, N., Miyahara, M., Ohnishi, Y., Takase, M., Kashiwagi, A., Santo, N., Iguchi, T. Effect of atrazine on metamorphosis and sexual differentiation in *Xenopus laevis*, *Aquat. Toxicol*, 2008, 87:215-226.
- Hayes TB, Collins A, Lee M, Mendoza M, Noriega N, Stuart AA, Vonk A.. Hermaphroditic, demasculinized frogs after exposure to the herbicide atrazine at low ecologically relevant doses. *Proc. Natl. Acad. Sci., USA*, 2002, 99:5476-5480.

- LaFiandra EM, Babbitt KJ, Sower SA.. Effects of atrazine on anuran development are altered by the presence of a nonlethal predator, *J. Toxicol. Environ. Health, Part A*, 2008, 71:505-511.

Atrazine is safe to use

Atrazine is a legally approved and heavily regulated product after exhaustive research including nearly 6,000 studies which determined it is safe for use as labeled. There is no other crop protection product that has received more examination than atrazine. Based on sound science and rigorous review, the EPA determined that atrazine poses "no harm that would result to the general U.S. population, infants, children or other ... consumers."

Syngenta is a responsible company. We take the stewardship of all our products seriously -- and atrazine is no exception.

Our 4,500 employees across the United States share a common purpose -- bringing plant potential to life. We all have families, so we are all interested in seeing that atrazine is properly regulated in the water we drink. We are convinced that it is. We all enjoy the safe and abundant supply of food that our products bring to our tables.

For more information, visit www.atrazine.com.

Syngenta is one of the world's leading companies with more than 25,000 employees in over 90 countries dedicated to our purpose: Bringing plant potential to life. Through world-class science, global reach and commitment to our customers we help to increase crop productivity, protect the environment and improve health and quality of life. For more information about us please go to www.syngenta.com or www.growmorefromless.com.

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