

Example of cross-program, cross-media science integration efforts in the Office of Pesticide Programs provided by Donald Brady, OPP, by email on 3/25/11

EPA has implemented an innovative program to protect vulnerable community drinking water systems from contamination by atrazine, an herbicide used widely in the U.S. on a variety of crops and nonagricultural uses. The program involves intensive, targeted monitoring of raw water entering certain community water systems in areas of atrazine use. When atrazine is detected in water above Agency safety standards the use may be prohibited in that specific watershed area. These and other measures are contained in EPA's "Interim Reregistration Eligibility Decision" (IREED), the result of several years of concentrated analysis of the best and most recently available scientific studies. The provisions of this action, contained in the IRED, have also been incorporated into an agreement with the principal registrant of **atrazine**, Syngenta. Under this approach, Syngenta is required to conduct a specialized testing program in vulnerable watersheds on a weekly basis to monitor "raw" drinking water during high-use periods for this pesticide. If the Agency's regulatory safety standards are exceeded in raw drinking water, **atrazine** use is cancelled in that geographic area. This more stringent approach requiring weekly monitoring of "raw" drinking water during certain times of the year augments monitoring conducted under the Safe Drinking Water Act (SDWA) of "finished" drinking water. For all other areas where **atrazine** might be used, monitoring of finished drinking water for **atrazine** is routinely required under the Safe Drinking Water Act (SDWA). For these systems, detections approaching the Maximum Contaminant Level (MCL) for **atrazine** will trigger additional monitoring and regulatory oversight. The Agency's existing MCL remains protective and in place. If the MCL is violated, the pesticide manufacturer is required to take the steps necessary to assist the community water system return to compliance with the **atrazine** MCL.

In its October 2003 [Atrazine Interim Reregistration Eligibility Decision \(IREED\)](#) (323 pp, 1.87 MB, [about PDF](#)), EPA required the registrants to conduct watershed monitoring to ensure protection of aquatic ecosystems. To gather the necessary data in corn and sorghum-producing areas, EPA required the registrants to implement an innovative, intensive ecological watershed monitoring program, as well as a risk mitigation process if atrazine water concentrations exceed the Agency's levels of concern.

The watershed monitoring program was designed to focus initially on flowing water bodies in the most vulnerable watersheds associated with corn and sorghum production. Monitoring occurred over a three-year period (2004 through 2006), and certain sites have had additional monitoring conducted from 2007-2010. During the sampling timeframe, 40 watersheds were monitored, and each watershed had at least two years of monitoring data. The 40 watersheds are statistically representative of 1,172 watersheds identified as potentially vulnerable to atrazine exposure, out of 10,000 watersheds with some atrazine use in the U.S. These sites appear to have characteristics that make them more prone to have atrazine water concentrations that exceed the Agency's levels of concern. The level of concern is based on atrazine testing in 33 studies of artificial pond and stream ecosystems. The results of these studies indicated that changes in aquatic plant communities were the most sensitive effects that are caused by atrazine. By focusing on protection of aquatic plant communities, EPA is protecting fish and invertebrates from effects that atrazine could have on habitat and food sources. The severity of atrazine effects on aquatic community structure is highly dependent on the frequency, magnitude and duration of exposure. The Agency has a refined method to evaluate any pattern of atrazine exposure to determine if the level of concern has been exceeded.

If any of the watersheds show levels of atrazine above the Agency's level of concern for two years, the registrants must initiate watershed-based management activities in concert with state or local watershed programs to reduce atrazine exposure. These remedies must be consistent with the EPA Office of Water's Total Maximum Daily Load (TMDL) program requirements but are enforceable under FIFRA through the 2003 Atrazine IRED and MOA with the registrant.