Triazine Network

Written comments to
Environmental Protection Agency's

Risks of Atrazine Use to Eight Federally Listed Freshwater Mussels

Pesticide Effects Determination

Pink Mucket Pearly (*Lampsilis abrupta*), Rough Pigtoe (*Pleurobema plenum*), Shiny Pigtoe Pearly (*Fusconaia edgariana*), Fine-rayed Pigtoe (*Fusconaia cuneolus*), Heavy Pigtoe (*Pleurobema taitianum*), Ovate Clubshell (*Pleurobema perovatum*), Southern Clubshell (*Pleurobema decisum*), and Stirrup Shell (*Quadrula stapes*)

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The Triazine Network respectfully submits these comments regarding the Environmental Protection Agency's "Risks of Atrazine Use to Eight Federally Listed Freshwater Mussels, Pesticide Effects Determination" regarding the Pink Mucket Pearly (*Lampsilis abrupta*), Rough Pigtoe (*Pleurobema plenum*), Shiny Pigtoe Pearly (*Fusconaia edgariana*), Fine-rayed Pigtoe (*Fusconaia cuneolus*), Heavy Pigtoe (*Pleurobema taitianum*), Ovate Clubshell (*Pleurobema perovatum*), Southern Clubshell (*Pleurobema decisum*), and Stirrup Shell (*Quadrula stapes*).

The Triazine Network is a coalition of over 1,000 local and state agricultural associations and farmers located throughout the United States. The coalition was established in 1995 as a result of the US EPA's November 1994 decision to initiate a special review of the triazine herbicides, including atrazine, simazine and cyanazine. Since its inception, the members of the Triazine Network have committed to the use of sound science and established scientific methods to evaluate the health and environmental impacts of the triazine herbicides.

The Triazine Network is aware of the more than 80,000 individuals and organizations from the U.S. agricultural community who have responded with information on farming practices and to express their concerns to the USEPA concerning their continued safe use of atrazine.

The members of the Triazine Network share the concerns of the entire U.S. agricultural community that any regulatory action regarding atrazine be based on a thorough understanding of U.S. farming practices and a comprehensive, scientifically defensible evaluation of the best available scientific data.

Triazine Network members include over twenty grower organizations from all across the nation that participated in the Natural Resources Defense Council v. US EPA Lawsuit as Defendant-Intervenors (RDB 03 CV 2444).

Agricultural producers across the country rely on atrazine as the foundation of their weed control programs. Over five decades of safe on-farm use has provided a reliable indication of the value of atrazine in the production of corn, grain sorghum, sugar cane and other crops. It also has provided a wealth of "real world" observations to backstop the use of overly conservative models that simply don't accurately characterize reality.

EPA is using data from atrazine aquatic monitoring sites, which are not representative of the habitat of these endangered mussels. The Agency states that the degree to which this targeted monitoring data represents exposures in streams occupied by these endangered mussels is not known. EPA has failed to use species location data at a sub-county level and therefore their effects determination does not meet the ESA standard of best available data.

EPA uses conflicting assumptions in its assessment, neither of which is true in reality: 1) that atrazine flows into grassy buffers and kills the buffer plants, thus leaving no land cover to keep soil from eroding into the waterways and 2) that atrazine runs directly into a water way (i.e. no buffer exists) directly affecting the aquatic plant communities and therefore affects these endangered mussels. Clearly the conceptual model used by EPA here for exposure needs to be refined to better represent the reality observed at a local level from fifty years of atrazine use.

Buffer strips are designed for atrazine runoff mitigation. However, when significant high intensity rainfall events occur and runoff follows, it is not only atrazine that is moving. Soil particles accompany any atrazine and of course a lot of water. These events create dramatic pulses in small stream environments that are dramatic, but short lived.

Significant algal growth does not occur in many streams under these conditions due to light limitations (caused by turbidity) and time constraints. Macrophyte growth will also be limited by scour and reduced light under elevated runoff conditions. Because the stream exposure levels are too short to cause any actual mortality to macrophytes and EPA previously has concurred that once elevated exposures are reduced below 15 ug/l (the condition existing 99% of the time) plant impacts are not significant, there is no basis to assert that atrazine levels in streams poses a significant secondary ecological risk.

The registrants will routinely work with grower groups, state lead agencies, university extension, and individual farmers to address potential issues that place the continued safe use of our needed products at risk. It is the right thing to do. It works. The Agency has also disregarded the pesticide management authorities that function well in most states to educate growers through their licensing and certification programs and to enforce pesticide laws including pesticide labels which in the case of atrazine have measures to protect aquatic life.

Overall, we believe the Agency's effects determinations are inadequate. The document does not accurately reflect the state of the science on the occurrence, environmental fate, and effects on plants and biota. Atrazine is among the most widely and thoroughly studied agricultural chemicals in North America and elsewhere. It appears that a considerable portion of the substantial environmental and eco-toxicological information available in the scientific literature is not included in this risk assessment. ***While time limitations may have been a contributor to the lack of a highly refined assessment, we do not believe the Agency can justify its conclusions based on limited data in light of the abundance of available data.*** A more probing analysis of the available information and thorough consideration of critical exposure impact factors (or even if there is exposure based on the presence of the mussels in question) would have greatly reduced or eliminated the alleged risk.

The conditions in smaller streams are quite variable and it is typical that longer-term average exposures (*e.g.,* 30 – 90 days) are far below the peak runoff exposure level reported for that class of water body. In fact, the higher the peak, the greater the difference between the 30 – 60 day average condition and the peak. The reason for this is obvious given the non-point source runoff nature of the ambient exposures. Once the runoff decreases or the source of the atrazine is reduced, subsequent rainfall/runoff events produce progressively lower non-point source loadings.

The basic factors influencing the impact of a compound on aquatic organisms (frequency, magnitude and duration) were not appropriately considered in the risk evaluation. This is a major oversight in the assessment. If the analysis properly considers the exposure duration in streams where the mussels actually live and the ability of aquatic plants to rapidly recover from atrazine exposure, these waters would not be identified as environmental concerns related to aquatic life impacts.

With respect to application of water quality objectives to non-point sources, EPA has historically cautioned that the typical application methodologies that are employed in most cases (*i.e.*, assumption of low flow or static conditions) should *not* be applied due to the highly dynamic nature of non-point source loads and their impacts.

Unfortunately, the EFED assessment failed to account for the time variable, intermittent nature of atrazine exposures, instead opting for worst case exposure assumptions that do not reflect the real world conditions influencing atrazine runoff into surface waters in the areas where these mussels actually reside. The proper interpretation of atrazine impacts in surface waters, such as streams subject to significant non-point source runoff, must consider that other factors in addition to atrazine affect the growth of aquatic plants in such waters.

Light penetration, not atrazine, is the major factor influencing plant productivity in waters subject to soil erosion and non-point source inputs under rainfall/runoff conditions. This lack of light, due to turbidity, effectively blocks primary productivity and has long been a factor in plant growth models used by EPA to regulate over-stimulation from nutrients. (Nutrient Criteria Technical Guidance Manual Rivers and Streams (USEPA 2000)). During periods of higher atrazine loading, only limited macrophyte growth could occur given the persistent elevated turbidity level of these systems (regardless of the atrazine level present). Thus, there is no basis to conclude that atrazine is posing a significant threat to plant growth in these waters ***because other factors are more limiting*.**

In addition, in streams, it is well recognized that short detention time influences the ability of algae to grow and that significant algal growth tends to occur primarily in larger rivers and lakes that have greater detention time. The small streams that exhibit the highest atrazine levels will simply not exhibit the type of detention time that is needed to promote significant algal growth in the area where atrazine inputs occur. Of course, downstream waters would offer such habitat, but further downstream, lower atrazine levels would likely be present.

EPA has repeatedly been admonished to ensure that its models projecting impacts reflect real world conditions and account for the relevant factors influencing chemical impacts (In *Edison Electric Institute v. EPA*,268 the court rejected EPA's application of a toxicity test to mineral wastes, as the court was unable to discern the requisite "rational relationship" between the scientific approach and the issue under consideration).

Similarly, it is necessary to account for light penetration and the growth period of different waters, before concluding that atrazine presents a significant threat to aquatic life in such waters. Proper consideration of these factors for small streams subject to soil erosion, as is common in farm areas with atrazine usage, would confirm that little if any adverse effects would be expected for stream environments.

The environmental effects of the triazine herbicides have been more carefully studied than any other pesticide group. It is with that background that we have confidence in the continued safe use of the product. Where regulators look to models to predict the impact of atrazine over a few days, months, or years, our members look at actual streams over decades, wondering why the real world that they live in seldom parallels the modeled world that threatens regulation.

It should seem obvious that any profound effect caused by atrazine use could be observed in the real world, without the use of theoretical models. Our growers invite the agency to visit their "real world" and see what the models don't. Additionally, EPA has not factored in the label use requirement for a 66-foot buffer between application sites and point of entry to streams, the effectiveness of which is supported by published literature.

Also, our growers remind you of their efforts with stewardship programs that they have initiated to ensure that surface runoff of atrazine and other contaminants are limited. Millions of acres are bordered by buffer strips and riparian zones. Our farmers use a combination of conservation tillage (no till, mulch till and ridge till) methods on anywhere from 20 percent to 60 percent of the acres planted each year in nine states (Illinois, Iowa, Indiana, Nebraska, Ohio, Missouri, Kansas, Texas, Louisiana). Data from the US Department of Agriculture, and confirmed by growers in every survey we have seen, shows that ***atrazine is the most widely used herbicide in conservation tillage systems***. These systems are extremely important in erosion and sediment runoff control and atrazine is obviously important to these systems.

Conservation tillage makes cropland much less vulnerable to soil erosion, which is reduced by as much as 90 percent when compared to intensive tillage. And when erosion is prevented, so is the runoff of sediment to nearby waterways, helping to protect aquatic ecosystems including endangered mussels and the quality of drinking water. EPA ranks sediment runoff as the number one pollutant in our nation's waterways.

Atrazine has been used safely for over 50 years. If the EPA's assessment scenario was valid, then no grassy buffers for waterways would exist at any location that atrazine was used and any species relying on aquatic plants in those areas would be not be thriving. This is clearly not the case.

The Triazine Network wants to reconfirm our commitment to be a good partner with EPA and others working on regulatory issues regarding atrazine. We offer to further assist EPA and others with our tremendous amount of expertise, which can serve to backstop modeling with what we observe and do every day on our farms. We believe growers are key to a win – win resolution that adequately protects human health and the environment, while allowing our farmers to competitively produce products for this nation, and indeed the world.

Respectfully submitted on behalf of our growers by the Triazine Network Executive Committee,

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Cc: Defendant Intervenors (RDB 03 CV 2444)