Reevaluation of the Human Health Effects of Atrazine:
Review of Non-cancer Effects and Drinking Water Monitoring Frequency

Comments by: Gary Marshall, CEO, Missouri Corn Growers Association

I would like to talk to you today about the importance of atrazine to farmers in Missouri. Since its introduction, atrazine has been the workhorse of nearly all weed management programs in corn production. Farmers have relied on its effectiveness, safety, and the economic value it brings to corn production. Still today, atrazine remains an integral part of most weed programs either as the main component or as an important tank mix partner. It is tools like atrazine that allow our farmers to produce an ample and safe food supply that is the envy of the world.

Some critics claim that atrazine is no longer needed. They say that new technologies like glyphosate tolerant crops have rendered atrazine obsolete. These claims could not be further from the truth. Reliance on one product to control weeds has already led to an epidemic in weed resistance, some would say. The most recent summary indicates 30,000 sites infested on up to 11.4 million acres. In a period of three years, the number of reported sites infested by glyphosate-resistant weeds has increased nine fold, while the maximum infested acreage increased nearly fivefold.

"The cost of forestalling and controlling herbicide-resistant weeds is estimated to cost farmers almost $1 billion each year, at an additional cost of $10-20 per acre." In Missouri, we have seen wide outbreaks of glyphosate tolerant weeds species. Having and using herbicides with multiple modes of action like atrazine is critical to managing resistant weed species. For this reason alone, it is disingenuous for critics of atrazine to claim that it has been rendered obsolete by newer technologies. All new herbicides brought into the market in the last 15 years utilize atrazine.

As water science has evolved, we in agriculture have gained a better understanding of how our farming activities can impact the environment. Farmers are, first and foremost, stewards of their land. For this reason average use rates for atrazine have declined from nearly four pounds of active ingredient per acre to just one and a half pounds per acre. This is born out in recent data by the USGS that shows atrazine levels in our nation’s rivers and streams continues to decline. In the 90’s Missouri had five major drinking water reservoirs that were placed on the state’s 303d list for impairment due to atrazine.

The Missouri Corn Growers Association undertook a five year project, partnering with the state DNR, EPA, USDA and Syngenta, to deploy 50 automated samplers in two of the largest watersheds. The idea was to collect real time water samples that would track how atrazine was leaving the field, transporting through the watershed, and being deposited in the reservoirs. Additionally, edge of field studies would evaluate several best management practices that could limit the run-off of atrazine. Rate reductions, application timing, and tillage practices were all evaluated on real fields in the watersheds. For instance, we looked at how well incorporation of atrazine was at reducing run-off. Turns out, it is a very effective tool, but it is

not the only option. Moving the application timing of atrazine to a post application is also an effective management tool, as is splitting the rate of atrazine into two different applications.

After the project was completed, MCGA worked with farmers in the five watersheds to implement management practices shown to be effective at reducing atrazine run-off. The partnership was a success. The state Department of Natural Resources actually used data collected during this project to remove the five water-bodies from the impared list for water quality. This was nearly unprecedented at the time. I think this is a great example of how deeply committed we in the agriculture community are to working proactively to protect our environment. Furthermore, we support the state level quarterly drinking water sampling program that protects our drinking water supply.

Here are some examples of conservation practices we use and remember, we use conservation tillage on 44 million acres:

Reduced plowing can reduce soil erosion by 90%
Reduced erosion decreases sedimentation protecting existing aquatic systems
Conservation tillage can reduce nutrient runoff by 70%
Conservation tillage reduces fuel use by 300 million gallons per year in the US
Conservation tillage provides better habitat for wildlife

The benefits of atrazine cannot be overstated. Without atrazine, the high adoption rate of conservation tillage methods would not have been nearly as successful. When you reduce tillage you reduce soil erosion, but you become much more dependent on herbicides for weed control. Remember, there is a switching cost of more than $30 per acre if you take atrazine out of farmer's hands. In Missouri, that means this is a $100 million issue to corn and grain sorghum farmers. Nationwide, that's over $2.5 billion! Make no mistake, we consider this a fighting matter and we will fight for the right to use a safe reliable product like atrazine.

Atrazine is used in a majority of weed control programs either as a tank mix partner. Losing the use of atrazine would mean more farmers using a plow or disk to control weeds and a step back in our progress against soil erosion. This means not only more soil loss, but requires more diesel fuel, machinery expense and labor resulting in a much larger carbon footprint.. Small farmers cannot afford this extra expense.

In Missouri, and throughout our nation, utilizing education and stewardship activities, we are able to work with farmers and retailers to limit farming's impact on the environment. Farmers are aware now more than ever of the importance of following proper label guidelines including proper setbacks from streams and tile inlets. There is great emphasis placed on using the lowest possible use rate, following an integrated pest management plan, and installing protective buffers like field borders, waterways and buffer strips. Making use of USDA programs like EQIP and CSP has greatly increased Missouri's conservation efforts. Conservation, water quality, and modern farming practices are three pillars tied together in a symbiotic relationship. Atrazine is a tool that allows us to use conservation tillage and farm in a productive manner. Without it, our advances in conservation and production will ultimately falter, as will water quality.