October 7, 2022

*Submitted electronically via regulations.gov*

Mr. Alex Hazlehurst
Chemical Review Manager
Pesticide Re-Evaluation Division (7508P)
Office of Pesticide Programs
United States Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460-0001

RE: Illinois Farm Bureau Comments Regarding Proposed Revisions to the Atrazine Interim Registration Review Decision ("IRRD")
Case Number 0062
Docket No. EPA-HQ-OPP-2013-0266

Dear Mr. Hazlehurst:

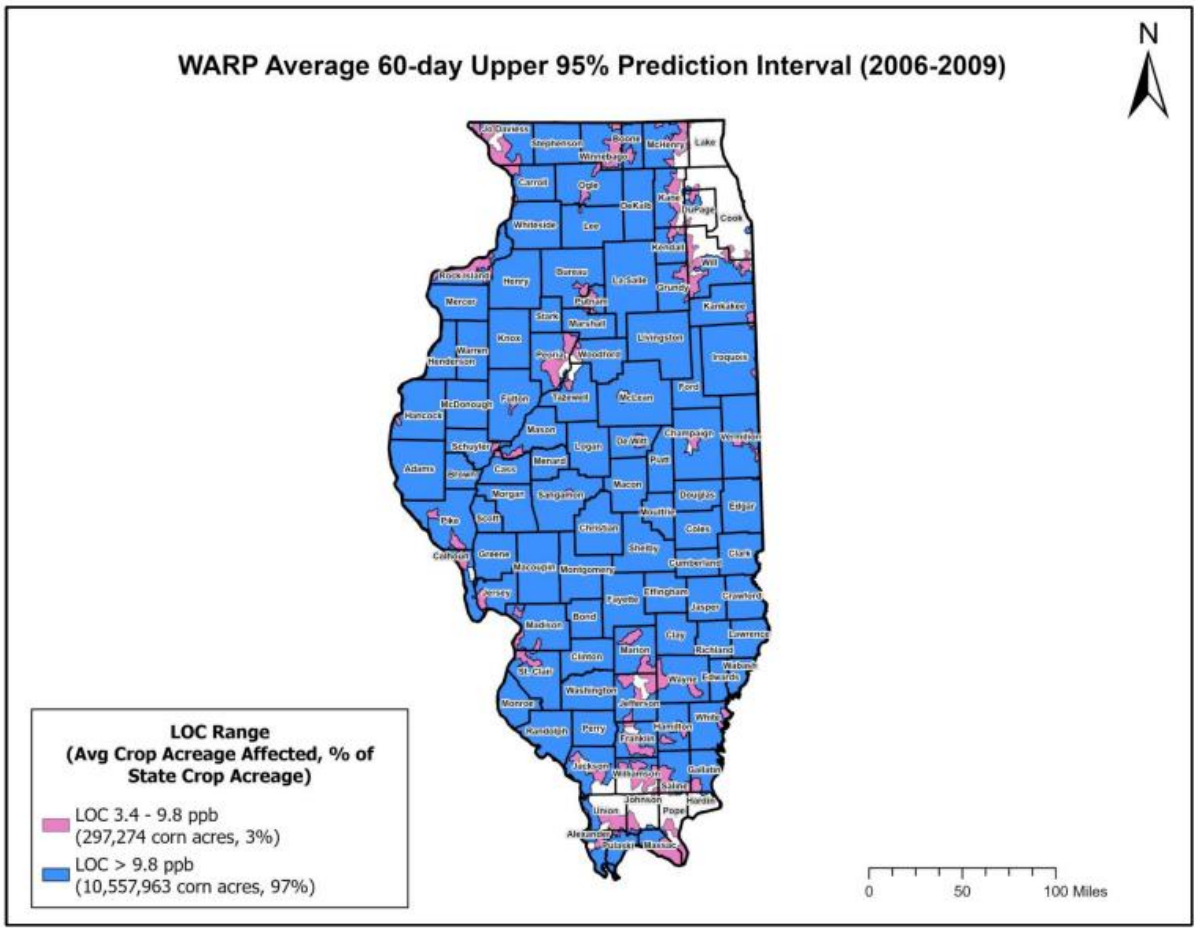
The Illinois Farm Bureau® ("IFB") appreciates this opportunity to offer the United States Environmental Protection Agency ("USEPA" or "Agency") comments regarding its "Proposed Revisions to the Atrazine IRRD". IFB is a member of the American Farm Bureau Federation® ("AFBF"), a national organization of farmers and ranchers. Founded in 1916, IFB is a non-profit, membership organization directed by farmers who join through their county Farm Bureau ("CFBs"). IFB has a voting membership of more than 74,000.

**This issue is a critical one for IFB farmer members, with approximately 2,000 of them filing individual comments in the above-referenced docket in addition to this organizational comment.**

Illinois farmers have used atrazine for 50 years, relying on the fact that it is one of the most studied herbicides in history. Illinois farmers, as well as farmers in 60 countries around the world, use atrazine to produce safe, abundant and affordable crops. According to Dr. Don Coursey, an economist at the University of Chicago, a ban on atrazine would cost farmers between $26 and $58 per acre. In 2003, USEPA estimated that growers would lose an estimated $28 per acre without atrazine. Using either estimate, this is a significant cost that would be borne by Illinois farmers when no cost-effective alternatives exist.

**The Rationale for the Proposed Concentration Equivalent Level of Concern ("CE-LOC") is Problematic**

USEPA's Proposed Revisions impose complex mitigation requirements on watersheds with predicted aquatic atrazine concentrations that exceed the proposed new concentration equivalent level of concern ("CE-LOC") of 3.4 µg/L, with additional requirements for watersheds whose predicted concentrations exceed the proposed new 90th percentile level of 9.8 µg/L. In the past, including in the 2016 risk assessment, USEPA determined predicted aquatic atrazine concentrations using a regression model known as the Watershed Regression for Pesticides for Multiple Pesticides model (WARP-MP). The documents provided on June 30, 2022, reveal that USEPA developed a new approach to predicting concentrations using the WARP-MP model, using new data, assumptions, inputs, and approaches. The resulting map of watersheds with predicted atrazine concentrations exceeding 3.4 µg/L and 9.8 µg/L and the amount of crop acreage subject to the proposed mitigation requirements are far greater than under USEPA's previous approach. For example, the following is the Illinois map, showing an impact to a great majority of the state.




In the June 30, 2022 documents, the Agency contends that the 15 µg/L CE-LOC adopted in the 2019 Regulatory Update and 2020 Interim Decision, unlike the 3.4 µg/L CE-LOC proposed in the 2016 draft risk assessment, "was not determined based on an analytical assessment." To

the contrary, in 2019, USEPA conducted an updated "quantitative uncertainty analysis" based on the rescoring of 11 underlying cosm studies consistent with the recommendations of the 2012 SAP, and chose a CE-LOC value within that range. The 3.4 µg/L CE-LOC was previously determined by selecting a value within a range produced from a quantitative uncertainty analysis that had rejected the 2012 SAP's recommendations. USEPA produced no additional quantitative analysis in support of the 3.4 µg/L CE-LOC. With all due respect, IFB is incredibly concerned about the methodology and data used to arrive at the new CE-LOC.

We question why the Agency's re-evaluation focused only on the CE-LOC by the previous administration. It appears that the CE-LOC, regardless of the level the Agency wants to select, is based more on modeling than actual *in situ* measurements. Are there actual, documented and verified instances of atrazine damaging an aquatic plant community? With millions of pounds applied annually for over 50 years, one would think if devastation of aquatic plant communities was going to happen, it would have occurred years/decades ago when annual application rates were much greater than current application rates.

IFB is concerned that USEPA mischaracterizes the history of the Agency's atrazine CE-LOC determinations in its Proposed Revisions and supporting materials. The record is clear that the 3.4 µg/L CE-LOC proposed in 2016 was part of a draft ecological risk assessment that was subject to substantial scientific criticism and was never adopted by the Agency; that the 2019 Regulatory Update announced USEPA's decision to use 15 µg/L as "the CELOC"; and that the 2020 Interim Decision (including supporting documents signed by scientists from USEPA's Ecological Fate and Effects Decision) confirmed the decision to use 15 µg/L as "the CE-LOC." USEPA's recent efforts to "clarify" this history ignore the actual language of USEPA's determinations and insert qualifying language that is not present in the documents. While the Agency can exercise its discretion to re-evaluate its 2019 and 2020 decisions and can present the scientific basis for its proposed decision to adopt a 3.4 µg/L CE-LOC, it is not appropriate for the Agency to mischaracterize previous regulatory decisions and documents or the scientific recommendations of prior Scientific Advisory Panels ("SAPs"). Doing so undermines public understanding of the issues and undercuts the public's ability to rely on USEPA's regulatory decisions and determinations.

There would be significant scientific and practical concerns if USEPA were to establish a new CE-LOC of 3.4 ppb as a "science based" or "regulatory based" level for determining whether there have been any "exceedances" and for requiring additional label mitigation or monitoring for atrazine products. USEPA should not adopt a lower CE-LOC.

**A Scientific Advisory Panel is Necessary**

If USEPA proposes a lower CE-LOC, USEPA should seek the advice of another SAP, so that the scientific basis (if any) for lowering the CE-LOC and requiring additional label mitigation can be vetted by an independent panel of scientific experts.

The documents posted on June 30, 2022, indicate that USEPA "intends to seek external peer review of the risks to aquatic plant communities, which is the scientific basis that underlies this proposed risk management strategy." Doing so is warranted by the scientific complexity of USEPA's determination, the history of opposing scientific viewpoints and differing Agency determinations, and the very significant practical impacts of the proposed approach.

**Unintended Negative Environmental Consequences of the Proposed IRRD Exist**

Atrazine, working often in tandem with many other herbicides that constitute modern weed control systems, is a critical tool in agriculture's efforts to reduce nutrient losses to protect aquatic health and surface water quality. The Agency's assessment failed to account for the real and substantial risks of significant environmental damages to aquatic ecological health and water quality should the IRRD, despite the "pick-list" options, result in restrictions in atrazine use that lead directly to reductions in the use of conservation tillage and cover crops. Those risks and the environmental costs associated with those risks must be considered to ensure that the IRRD is grounded in a complete and sound risk assessment. We offer more details on these considerations below.

1. **Conservation tillage is only possible because of the use of herbicides, often as a system of multiple products. Atrazine is often integral to that system.**

Approximately 70 percent or more of row crop acres are using weed control systems that are consistent with conservation tillage. The majority of US row crop acres, including essentially all of the conservation tillage acres, are treated with a combination of herbicides each year. In the case of the corn-soybean rotation, USDA's National Agriculture Statistics Service reports that 65 percent of the corn acres are being treated with atrazine, with four other products commonly in use, and then 3 other products are used on the soybean acres (see Table 1 below).

Table 1. Herbicide treated acres in corn, soybean, cotton, and wheat and the most used herbicides (based on NASS reporting data corn – 2019, and soybean- 2021).

| Crop | No of acres (U.S.) | Planted acres treated with herbicide | % of acres treated with a specific herbicidal active ingredient | | | | |
|---|---|---|---|---|---|---|---|
| | (million) | (%) | atrazine | mesotrione | glyphosate | acetochlor | alachlor |
| Corn | 89.1 | 97 | 65 | 42 | 34 | 33 | 29 |
| | | | | | | | |
| | | | Dicamba | sulfentrazone | glyphosate | s-metolachlor | |
| | | | | | | | |
| Soybean | 83.1 | 98 | 18 | 21 | 78 | 19 | |

The reason for atrazine's widespread use is its efficacy (provides good to excellent control of a wide spectrum of broadleaf and some grass weeds), flexibility (can be used at multiple timings, and can be tank mixed (used effectively with other herbicides simultaneously). Atrazine is soil applied and does not need to be incorporated to be effective, making it highly congruent with conservation tillage operations. Lastly, atrazine has a low-cost relative to other herbicides.

Farmers are commonly using mixes of herbicides in this corn-soybean rotation to address complex arrays of weeds in fields and also to help reduce weeds' development of resistance to the herbicides. Atrazine is a highly effective tool in the fight against weed resistance as there are few atrazine resistant weeds despite its use for over 50 years.

In general terms, it is common today for growers to apply a pre-emergent mix of herbicides, some of which enter the soil to control any weeds that will soon emerge, and some of which provide residual control of weeds that may appear during the early season (3 or more weeks after planting) while the planted crop is getting established. A second application of post-emergent herbicides is also common to control weeds that emerge late (e.g. warm season species) and uncontrolled weeds remaining from the first application. Whether and how these post-emergent applications take place is based on the weeds present. Commonly these are "foliar" herbicides (as opposed to soil applied herbicides) that are applied to and taken up through weeds' leaves.

Atrazine applied to the soil as a preemergent application controls broadleaf and some grass weeds during emergence, as well as those that have emerged. Atrazine is often pre-mixed in with other herbicide combinations to control many types of weeds. Atrazine use rates have been reduced over the past 50 years. When first released, atrazine rates were up to 4 pounds of active ingredient per acre to control weeds such as quackgrass. In 2022, 'typical' use rates range from 0.3 (when mixed with another active ingredient) to 2 pounds (if used alone) of active ingredient per acre.

**2. Cover crops are growing in use and are one of the central practices in Illinois' Nutrient Loss Reduction Strategy, consistent with the Agency's Nutrient Framework Memoranda of 2011, 2016 and 2022.**

Economical and practical cover crop use is commonly dependent on herbicides to ensure the cover can be terminated and allow for timely planting of the cash crop. While atrazine can be used for this purpose, glyphosate is commonly used; however, atrazine, glyphosate and other key herbicides are used as a system of products to control weeds while preventing the development of weed resistance. Cover crop termination is a good example of how attention has to be paid to how these systems are used to deal with resistance while accomplishing the other agronomic objectives; in this case termination of the cover crop in a timely manner to allow the cash crop to be planted during the optimal agronomic window. Cover crops also reduce erosion and therefore can play an important role reducing mineral forms of P losses from croplands. USDA Natural Resources Conservation Service ("NRCS") estimates there is a 17 percent reduction in sediment losses attributed to the use of cover crops in 2016 when compared to a no-cover crop scenario; P is commonly bound to such sediment losses, and the cover crops are reducing P loads leaving the farm as a result (See Conservation Systems on Cropland.)

Nitrate nitrogen (N) is water soluble and can move with water that leaves a farm field whether through surface runoff or movement of water through a soil profile (leaching) into tile drainage or into groundwater. N, along with P, is commonly identified as a major cause of impairment of surface water quality. In excessive quantities, N promotes excessive plant growth and/or algal blooms, many that are very toxic to fish and mammals. Nitrate in drinking water in excessive quantities is considered a threat to human health. Therefore, drinking water sources (surface and groundwater) are treated for nitrate when it is present at potentially harmful levels. (See US Geological Survey's Nitrogen and Water, 2018).

N losses are not significantly reduced through reduced soil erosion (N is soluble and not bound to soil particles, but organic matter containing N can and often is part of the erosive materials leaving a field). But cover crops significantly reduce nitrogen losses by the plants'

uptake of available N into their tissues. Planted near or at the end of a cash crop's growing season or after it is harvested in the fall, a growing cover crop takes up available soil N and retains it in plant tissues through the winter and into spring. That N would otherwise be vulnerable to water-borne losses from the field with water movement (rainfall infiltration or snow melt) or be available for gaseous emissions due to microbial activity as the soil warms in spring.

After the cover crop is terminated in the spring, typically two or more weeks before the next cash crop is planted, the resulting cover crop residues aid in recycling N back to the cash crop through microbial degradation acting as a slow-release N source during or closer to the time when the cash crop is actively growing and assimilating N. USDA NRCS estimates that there is a 25 percent reduction in surface and subsurface N losses from crop fields attributed to the use of cover crops in 2016 when compared to a no-cover crop scenario (see Conservation Systems on Cropland).

Cover crops valuable capability reduce N losses as well soil erosion, and therefore mineral P losses, have led to cover crop practices being a top priority selected by many states in the Mississippi River Basin under their Nutrient Loss Reduction Strategies. These strategies, undertaken in light of the Agency's Nutrient Framework policies of 2011 and reaffirmed in 2016 and again earlier this year (see for example: Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reduction), have embraced cover crops as one of their critical practices needed to reduce nutrient losses consistent with State-Federal Hypoxia Task Force goals relative to the aquatic ecological health of the Gulf of Mexico.

For example, the Illinois Nutrient Loss Reduction Strategy has made cover crop adoption one of its top practices to achieve the N and P loss reduction goals. Similarly, a goal of cover crop adoption on several million acres figures prominently in the nutrient loss reduction strategies for Iowa and Minnesota. In addition, there are multiple other federal, state, and NGO initiatives seeking to promote the adoption of cover crops to reduce nutrient losses, protect aquatic health and achieve other "climate smart" and "soil health" objectives that result from cover crop use.

**3. Among the pick-list options are practices that are internally inconsistent and impractical or impossible for many farmers to use.**

With respect to the following practices on the picklist for field corn, we offer these observations:

- *No pre-emergence applications*—In many instances this practice will be highly inconsistent with a successful conservation tillage and cover crop program, as pre-emergent uses of atrazine can be critical to successful weed control programs. It also could lead to **greater** atrazine runoff in instances where growers instead make an early post-emergent application in the timeframe which corresponds to the highest risk for runoff in crop fields, as post-emergent is the period often with larger amounts of rainfall and certainly with soil conditions more vulnerable to erosion. In many instances pre-emergent applications should instead be considered an erosion mitigation practice as a result.

- *Cover crop*—As noted above, cover crop use is only practical if the cover can be effectively and promptly terminated in time to allow for the cash crop to be planted. The most common, effective and economical method of cover crop termination is through the use of herbicides, including atrazine. That termination practice is a pre-emergent activity. We are concerned that the new label restrictions on atrazine use will not allow for adequate preemergent use of atrazine given the overall total limit on atrazine use per year. Note also that cover crop seeds are commonly planted into a standing cash crop late into the growing season before harvest to ensure the cover can germinate and get sufficiently established before the frost. This good practice is at odds therefore with statements in the Agency's mitigation practices supporting documents which say that "*The cover crop must be <u>planted after harvest</u> of the previous season's crop…*". We note also that the supporting documents states that *"The cover crop must… remain on the field up to the field preparation for planting the crop*." Cover crop termination commonly takes place well before the cash crop is planted, and such cover crop termination practices are rightfully considered part of *"…the field preparation for planting the crop."* Lastly, depending on the growing zone, the cover crops used can include "winter kill" varieties that are killed by the winter's cold but retain sufficient biomass on the soil surface to protect it from erosion in the spring before the cash crop is established. Oats are a prime example of this type of cover. The Agency's discussion of a cover crop practice needs to reflect all of these critical considerations.

- *No tillage and reduced tillage (>30% of soil covered)*-As noted above, conservation tillage (no-till and reduced tillage achieving greater than 30% residue cover) is only possible through the use of a system of herbicides that includes atrazine, and that system is critical also to address the problem of weed resistance. We are concerned that this picklist option will not be available in practice given the quantities of atrazine that need to be used both pre- and post-emergent to make these conservation tillage systems work.

- *Soil incorporation to a depth of 2.5 cm*—Incorporation will reduce the risk of atrazine runoff, but it will increase the amount of soil erosion as well as P loss, which are, as noted above, major sources of impairment to aquatic ecological health. Incorporation is not allowed under no-tillage systems and is restricted in certain specific ways under other conservation tillage systems. Furthermore, this practice could well be at direct odds with many farmers' Highly Erodible Land (HEL) conservation compliance plans, which are required since the 1985 Food Security Act. Farmers must have such plans in use on their HEL in order to be eligible for farm program, crop insurance and conservation financial assistance benefits. Many of those plans rely on conservation tillage and residue management to reduce erosion. As such, these growers are often expected to studiously avoid incorporation of residue into the soil because of what this means for erosion. We are concerned that this option could be effectively unavailable to farmers on HEL, or if used put them out of compliance and putting their farm program participation at risk.

**4. The Agency's risk assessment for atrazine should include the consequences of the development of weed resistance, the effects on conservation tillage and cover crop use, and the resulting potential for ecological harms to water quality and aquatic life.**

IFB is deeply concerned that the net effect of the proposed label changes significantly limiting atrazine's use will lead to farmers reducing their use of conservation tillage and cover crops. Instead, they will increasingly rely on mechanical tillage as their primary means for controlling weeds and helping to manage the development or presence of weed resistance to herbicides.

We note that there is great irony in the fact that in the Agency's efforts to regulate atrazine use to reduce its runoff to protect aquatic health it could very well be unintentionally causing great damage to aquatic health. It is for this reason that we encourage the Agency to step back from this interim decision and conduct a more complete risk assessment of the possible effects of an atrazine IRRD on aquatic health. That more complete assessment must take into full consideration the potential effects all of the relevant ecological stressors (atrazine, sediment, mineral P and nitrate N) could play in harming aquatic ecology.

**Proposed Mitigation Practices Raise Several Additional Questions**

IFB offers the following questions regarding of the Agency's proposed mitigation practices:

- Can the Agency please describe how the required number of mitigation practices was determined and how the list of mitigation practices was developed?

- Does the Agency have empirical data that the list of potential mitigation practices will reduce atrazine runoff? The record seems to lack information to show how the complex and multi-level mitigation requirements will be effective at reducing atrazine runoff, as compared to simply reducing surface water runoff.

- How does the Agency address the combined effect of more than one mitigation practice implemented on the same field? How were models used? How were actual measured atrazine concentrations in watersheds used?

- Did the Agency contemplate practical limitations regarding applicator evaluation of mitigation options? In many instances in Illinois, the applicator is someone hired to make the application and has no ability to mandate which of these "picklist" practices their customer follows. Specifically, who is responsible for the selection of which mitigation practices are implemented? Farmer? Applicator? Landowner?

- Did the Agency contemplate practical limitations regarding applicator evaluation of mitigation options? In many instances in Illinois, the applicator is someone hired to make the application and has no ability to mandate which of these "picklist" practices their customer follows.

- How will the Agency evaluate effectiveness of the mitigation in the future? What metric will these future evaluations employ? If there actually has been no significant increase in atrazine detections in water supplies to justify these proposed changes,

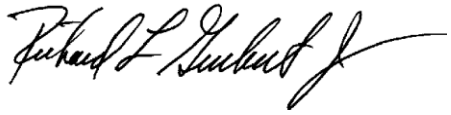
how will these proposed changes reduce instances of atrazine detections in water supplies?

For the reasons articulated above, that we encourage the Agency to step back from this interim decision and conduct a more complete risk assessment of the possible effects of an atrazine IRRD on aquatic health.

If you wish to discuss any of these concerns, please contact Lauren Lurkins, Director of Environmental Policy, at llurkins@ilfb.org or (309) 557-3153.

Sincerely,

ILLINOIS FARM BUREAU®



Richard L. Guebert, Jr.
President
Illinois Farm Bureau®
1701 Towanda Avenue
Bloomington, IL 61701-2050