**November 16, 2015**

**TO:** SFIREG Members

**FROM:** Kirk Cook

Chairman Environmental Quality Issues Workgroup

**RE:** Response to Update of Aquatic Benchmarks and Recommendations for Website Modifications

**Issue**

In 2007 the U.S. Environmental Protection Agency, Office of Pesticide Programs developed a web site containing aquatic life benchmarks for use as indicators of potential adverse impacts to aquatic life. Benchmarks are derived from the evaluation of toxicity data for an pesticide active ingredient (A.I.) or metabolite and include acute toxicity values for fish, invertebrates, and vascular and nonvascular plants and chronic toxicity values for fish, invertebrates, aquatic plants and other organisms within the aquatic ecosystem. EPA has established multiple benchmarks for numerous A.I.’s or metabolites to address both acute and chronic effects to sensitive aquatic species. States and USEPA use these benchmarks in interpreting monitoring data, and to identify and prioritize sites and pesticides that may require further investigation. Additionally, states may use these benchmarks in assessing when a Pesticide of Interest becomes a Pesticide of Concern (per State/EPA cooperative agreements).

In 2014, the USEPA-OPP reevaluated the aquatic benchmark(s) for the herbicide atrazine. In conducting this evaluation, it was determined that atrazine’s aquatic life benchmark concentration for the vascular plant acute value would be changed from 37 ppb to 0.001 ppb. This reduction in the value for atrazine created significant concern among states that have chosen to use the **lowest** benchmark derived for a specific A.I. or metabolite (see table below for current EPA-OPP atrazine benchmarks) for pesticide evaluation purposes[[1]](#footnote-1).

**Atrazine Benchmarks**

|  |  |  |
| --- | --- | --- |
| **Species** | **Acute ug/L** | **Chronic ug/L** |
| Fish | 2650 |  |
| Invertebrates | 360 | 60 |
| Nonvascular Plants | < 1 |  |
| Vascular Plants | .001 |  |

This concern is rooted in the language of 2015-2017 FIFRA cooperative agreement guidance that require states to evaluate an A.I. to determine if it qualifies as a Pesticide of Concern and if so implement a management plan to address that concern and demonstrate progress toward addressing that concern. A.I.’s and metabolites that exceed a specified benchmark or percentage of that benchmark (trigger level) are defined within the cooperative agreement guidance as a Pesticide of Concern (POC).

If after implementation of management measures, data indicate a failure to demonstrate progress toward addressing concerns stemming from the use of a specific A.I. or metabolite deemed a POC, states have to consider cancellation of the use of that A.I. The 2014 benchmark for atrazine (vascular plants) is currently at or below the current laboratory detection limit making any detection of atrazine potentially a justification for classification as a Pesticide of Concern thus requiring states to either develop management measures to address their concern and track the effectiveness of those measures or engage in the cancellation of the registration of the A.I. within that state.

It is likely that as EPA-OPP continues to re-evaluate currently existing benchmarks, additional changes will be made to other A.I.’s. In some cases these new benchmarks will likely be lower than those currently posed on OPP’s website and some possibly being raised. In either case states that rely on OPP’s benchmarks as a basis for establishing “trigger levels” will be faced with modifying those levels and possibly changing their list of Pesticides of Concern.

**Discussion**

EPA’s decision to lower the atrazine benchmark presents challenges to states regardless of whether they chose to utilize the lowest OPP benchmark. The establishment of the benchmark at, or in some cases below the laboratory detection level essentially means that if a detection occurs of either atrazine or one of its many metabolite’s, states are required to establish management measures and track the success of those measures. As noted previously in some cases it may not be possible to develop successful management measures leaving cancellation as the only viable option.

For states, the major benchmark issue centers on the practice of adopting the lowest benchmark (regardless of the species for which that benchmark was established) as a basis for deriving a trigger level. There exists some confusion among states that they are required to adopt an OPP benchmark as a trigger level on which to base a POC determination. A careful review of the 2015-2017 cooperative agreement guidance[[2]](#footnote-2) and previous cooperative agreement guidance(s) reveals no such requirement, this opinion is shared by EPA’ Government and International Services Branch - FEAD. In fact states may choose to use any limit as long as it based on valid technical data and analysis. The current cooperative guidance (somewhat modified) states:

*Human health reference points may be based on values such Maximum Contaminant Levels (MCL), Health Advisory Levels (HAL); human health benchmarks), or state/tribal water quality criteria or standards.*

*Aquatic life reference points may be based on values such as EPA Office of Water (aquatic life criteria), OPP aquatic life benchmarks, or state/tribal water quality criteria or benchmarks*.

The language above does not contain any directive to states requiring them to use a specific OPP benchmark. Most states, however, choose to use a variety of the OPP benchmarks in conjunction with other regulatory or advisory limits such as Maximum Contaminate Levels (MCL’s), Health Advisory Levels (HAL’s), USGS Health Based Screening Levels (HBSL’s) or state/tribal regulatory levels for human health or aquatic life protection to evaluate water quality data. Generally, if OPP benchmarks are used, they are used strategically based on the state specific concern(s).

Some states, in response to feedback from environmental organizations or fear of challenges from these organizations, have adopted a policy of accepting the lowest benchmark (regardless of species specific focus). It is these states that are impacted the most by any changes to the OPP benchmarks; consequently it is these states that have the greatest concern regarding the atrazine benchmark. It is also these states that this position paper is directed towards.

**Suggested Remedy**

It is clear that states (and tribes) are not required to base their pesticide evaluations on or solely on OPP’s benchmarks. In fact implicit in the FIFRA cooperative grant guidance is the suggestion that states use a variety of technically valid limits on which to base pesticide evaluations and if necessary management measures that are designed to address state specific pesticide concerns. This fact appears not to be fully understood by some states, tribes and the general public. It is the position of EQI that if states, tribes and the general public understood the flexibility that exists, and state and tribes where able to convey that fact coupled with technical validation as to why a specific benchmark was used to establish a trigger level for pesticide determinations, the issues surrounding the atrazine benchmark could easily be remedied.

EQI proposes that the simplest solution to this issue is, 1) Develop and post language on OPP’s website that conveys the fact that the OPP benchmarks may be used by states to address their specific pesticide concerns but are not bound to do so. 2) States and tribes should include language in either their state pesticide management plans or within their specific cooperative agreement that indicates that depending upon the specific pesticide concern, the use of the lowest benchmark value (be that OPP or USGS, or state WQ regulations) may not be warranted.

EQI suggests the use of the following language to be posted on EPA-OPP’s benchmark webpage:

*Multiple benchmarks may be established for a pesticide depending upon the effects documented for specific insects, animals, fish or plants. States may choose to adopt one or more of these benchmarks when evaluating pesticide occurrences in the environment.*

EQI further suggests that states include the following language in their state pesticide management strategy or cooperative agreement narrative.

*States[[3]](#footnote-3) may choose to use an appropriate reference level when evaluating pesticides as to their potential concern. The chosen reference level may not necessarily be the lowest value established, but reflects the specific concerns of that state for that potential exposure.*

1. Also in 2014, the USEPA-OPP reevaluated the aquatic benchmark(s) for the herbicide simazine. As a result of that review the aquatic life benchmark (for non-vascular plants) was lowered from 36 ug/L to 2.24 ug/L. While this was a significant lowering of the benchmark it apparently has not had the impact to states pesticide evaluations that the atrazine benchmark modification has [↑](#footnote-ref-1)
2. Dated March 6, 2014 [↑](#footnote-ref-2)
3. Insert specific state name… [↑](#footnote-ref-3)