



VIA ELECTRONIC MAIL: [dmcclure@waterboards.ca.gov](mailto:dmcclure@waterboards.ca.gov)

March 5, 2010

Mr. Daniel McClure, P.E.  
Water Resource Control Engineer/Project Manager TMDL Unit  
Central Valley Regional Water Quality Control Board (CVWRQCB) 11020  
Sun Center Dr. #200  
Rancho Cordova, CA 95670

RE: Phase-III Water Quality Criteria (WQC) Derivation Method Developed for Cyfluthrin

Dear Mr. McClure:

The Western Plant Health Association (WPHA) welcomes the opportunity to comment on the technical document authored by Tessa Fojut, Ph.D., Sandra Chang, and Ronald Tjeerdema, Ph.D., of the Environmental Toxicology Department, University of California at Davis, concerning their updated methodology for deriving freshwater water quality criteria for the protection of aquatic life entitled "Cyfluthrin Criteria Derivation."

WPHA supports the more comprehensive technical comments provided by the major registrant of Cyfluthrin – Bayer CropScience LP. WPHA represents the interests of fertilizer and crop protection manufacturers, agricultural biotechnology providers, and agricultural retailers in California, Arizona, and Hawaii. Our members comprise more than ninety percent of all the companies marketing crop protection products in these states.

WPHA restates our previous concerns about the CVRWQCB embarking on a quickly and narrowly focused policy towards developing an excessively conservative WQC Method for 7 active ingredients to then be applied to listed "waterbodies" within the Central Valley. In the interest of brevity, please refer to our previously submitted comment letter on Diuron (dated & submitted on 4 December 2009), Diazinon (dated & submitted 16 December), Bifenthrin, Malathion (dated and submitted 15 January, 2010), and Lambda-Cyhalothrin (dated February 19, 2010) that had outlined our reasoning for objecting to this initiative, and had offered in its place our recommendation to closely monitor and adhere to US EPA's national program to address issues you have raised over limited aquatic toxicity data from pesticides.

In accordance with the request for public comments, WPHA is providing the following items for your consideration before finalization of this WQC Method for cyfluthrin:

- The authors concluded that there was insufficient data for them to use species sensitivity distribution (SSD) approach, so they used an assessment factor (AF) approach. Justification for the AFs should be given in the criteria document due to its importance in deriving the criteria. The role of the AFs is to compensate for uncertainty in a small data set where it is unclear about relative sensitivity of untested species. However in the case of cyfluthrin, and the other pyrethroids, it is well documented that amphipods and similar taxa are the most sensitive species. Applying a large safety factor to lowest LC<sub>50</sub> in the cyfluthrin data set, which is *Hyalella*, results in criteria that are overly conservative and unrealistic. If one compares the draft acute criteria recently released by the same authors for two other pyrethroids, one gets the impression that cyfluthrin is 5 to 20 times more toxic to aquatic organisms than the other pyrethroids. An unbiased review of the available information does not support the assertion that cyfluthrin is up to 20x more toxic than other pyrethroids.

- Pyrethroids bound to particulate matter or associated with dissolved organic matter are not biologically available to aquatic organisms and do not contribute to toxicity; only freely dissolved
- 4460 Duckhorn Drive, Suite A . Sacramento, CA 95834 Phone: (916)574-9744 Fax : (916) 574-9484 [www.healthyplants.org](http://www.healthyplants.org)



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pyrethroids are bioavailable and toxic. In laboratory toxicity tests using water with minimal particulate or dissolved organic matter, nearly all the pyrethroid is bioavailable. In ambient water, only a small fraction – a few percent or less – of the total pyrethroid may be bioavailable. Compliance with cyfluthrin water quality standards should therefore be based on concentrations of freely dissolved cyfluthrin, not total cyfluthrin. Freely dissolved cyfluthrin can be measured directly using solid phase microextraction (SPME), or estimated using an equilibrium partitioning model such as the one presented by Tenbrook et al. (2009).

- The mesocosm and microcosm studies summarized by Fojut, Chang, and Tjeerdema, indicate that multiple exposures to concentrations much greater than the proposed acute and chronic criteria have no effect, or at most a slight and transient effect, on a variety of aquatic ecosystems. As an example, a community level NOEC of 10 ng/L would suggest that the proposed chronic criterion (0.04 ng/L) is highly overprotective and should be reconsidered. Fojut, Chang and Tjeerdema cite these findings as confirmation that the proposed criteria are sufficiently protective. In fact, the mesocosm/microcosm findings suggest that adequate protection could be achieved with much higher water quality criteria.
- It is clear that the authors have done a thorough job in collecting the available aquatic toxicity information for cyfluthrin. Based on the extensive review scheme used, it is also clear that data quality is recognized as an important factor. However, we are concerned that while the data collection process was extensive, and review highly structured, the process has not necessarily led to the use of highest quality and most relevant studies and information.
- WPHA is concerned because this report states that water column concentrations of pyrethroids (e.g. cyfluthrin) have been reported to cause toxicity in surface waters of California without providing references to support this statement. Specific references are needed to document the presence of potentially toxic concentrations of cyfluthrin in the environment.
- The allowable frequency of exceedance (once in three years) for this cyfluthrin criteria is not supported by the receptor group (invertebrates such as *Hyalella*) for this pesticide. The life cycle for cyfluthrin-sensitive species such *Hyalella* is short (generally 1 to 1.5 months). Therefore, populations can recover fairly quickly, and a once-in-three-year exceedance is highly overprotective. The frequency of exceedance component of the criteria should have some flexibility to account for the life history of the receptor group.
- Considering the available information, the limited acceptance of the methods used, along with the unresolved errors in the document, WPHA wonders whether this document should be withdrawn until more information is available or a more robust method are available. USEPA currently has a project underway that is examining the methods to derive benchmarks for pesticides. We assert that it would be better to wait for the output of this effort, rather than to apply methodology that may not be considered in the near future the most appropriate for the derivation of water quality criteria for pesticides.

Thank you for your consideration of WPHA's comments concerning the updated methodology for deriving freshwater WQC for the protection of aquatic life authored by Fojut, Chang and Tjeerdema. WPHA looks forward to reviewing your responses to our letter. We continue to welcome all opportunities to work with CVRWQCB on this and other important water quality issues.

Sincerely,

Henry Buckwalter  
Director, Environmental & Regulatory Affairs



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cc via email: Ken Landau, Assistant Executive Officer  
Jerry Bruns, Environmental Program Manager  
Tessa Fojut, Ph.D., University of California at Davis