



VIA ELECTRONIC MAIL: dmcclure@waterboards.ca.gov

February 19, 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 Lambda-Cyhalothrin

Dear Mr. McClure:

The Western Plant Health Association (WPHA) welcomes the opportunity to comment on the technical document authored by Tessa Fojut, Ph.D. 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 "Lambda-Cyhalothrin Criteria Derivation."

WPHA supports the more comprehensive technical comments provided by the major registrant of Lambda-Cyhalothrin – Syngenta Crop Protection, Inc. We also support the technical comments provided by Prof. Lenwood Hall – University of Maryland. 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 and Malithion (dated and submitted 15 January, 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 lambda-cyhalothrin:

- The UCD methodology for deriving numeric water quality criteria (TenBrook et al. 2009) is generally sound, though could be improved through the use of an species sensitivity distribution approach.
- For derivation of Chronic Criteria, ECx values are preferable to MATCs. An MATC simply reflects a determination of statistical significance, regardless of biological significance or magnitude of effect. This issue has been well documented in the peer-reviewed literature. An ECx represents a specific magnitude of effect, and can include confidence intervals. Appropriate values of x have not yet been agreed upon, but they should be selected with appropriate biological significance in mind.
- 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 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

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fraction – a few percent or less – of the total pyrethroid may be bioavailable. Compliance with lambda-cyhalothrin water quality standards should therefore be based on concentrations of freely dissolved lambda-cyhalothrin, not total lambda-cyhalothrin. Freely dissolved lambda-cyhalothrin 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 and Tjeerdema, as well as others that were not included in this document, 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 a proposed acute and chronic criterion (1 ng/L) is highly overprotective and should be reconsidered. Fojut 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.
- WPHA is concerned that the current data review process used to select lambda-cyhalothrin toxicity data for criteria development is flawed because critical study elements (i.e., acceptable control response) were not initially evaluated and deemed acceptable before a more detailed assessment of various study components. The current data review process could result in invalid studies being accepted for criteria development or valid studies being rejected.
- We request that the UCD authors of this Method clearly define the proposed numeric criteria which do not have a "detrimental physiological responses" in aquatic life, and how this was defined.
- Despite the rigorous review process to screen toxicity data described in the draft WQC document, it is stated that studies that were determined to be unacceptable for criteria development (LL or LR rated studies) are still used in this process. How can unacceptable studies provide any value to this process?
- WPHA is concerned because this report states that water column concentrations of pyrethroids (e.g. lambda-cyhalothrin) 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 lambda-cyhalothrin in the environment.
- The allowable frequency of exceedance (once in three years) for this lambda-cyhalothrin criteria is not supported by the receptor group (invertebrates such as *Hyalella*) for this pesticide. The life cycle for lambda-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.

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 Drs. Fojut 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,



Renee Pinel
President/CEO

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

