



Department of Pesticide Regulation



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MEMORANDUM

Arnold Schwarzenegger
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TO: Danny McClure
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SUBJECT: REVIEW FOR CYFLUTHRIN WATER QUALITY CRITERIA DERIVATION

The cyfluthrin water quality criteria were derived by applying a methodology recently developed by the University of California, Davis. Explicitly following the data evaluation criteria of the methodology, the author(s) identified 16 acute and 3 chronic toxicity studies that were reliable and relevant for cyfluthrin criteria derivation from 53 original studies. As acceptable acute toxicity data were only available from four taxa and dataset for insect was missing, the species sensitivity distribution method could not be applied to derive the acute water quality criterion (TenBrook *et al.* 2009a). Instead, the acute water quality criterion was calculated by using the Assessment Factor procedure which yielded a recommended acute value of 0.2 ng/L. And as only three chronic toxicity values were acceptable, the chronic criterion was derived by applying the acute-to-chronic ratio method that produced a value of 0.04 ng/L (TenBrook *et al.* 2009a).

Limitations of the derived water criteria were due to the lack of data from required taxa in both acute and chronic toxicity data sets, i.e., missing insect toxicity for the acute criterion derivation and *Hyaella azteca* toxicity for the chronic criterion. Because of the limitations, the national acute and chronic criteria for cyfluthrin can not be derived from the U.S. Environmental Protection Agency methodology. Following analyses on the existing toxicity data of sensitive species, threatened and endangered species, and ecosystem and other studies, it appears reasonable to conclude that there is no evidence shown that the derived acute and chronic criteria will be underprotective of aquatic organisms based on the current knowledge of cyfluthrin toxicity.

There were a couple of editorial errors that need to be corrected:

1. The first paragraph on page 4, "lambda-cyhalothrin" should be "cyfluthrin."
2. Units were missing on Tables 8 and 11.

