

ITEM: 26

SUBJECT: Development of a Basin Plan Amendment and TMDLs for the Control of Pyrethroid Pesticide Discharges – *Board Workshop to Receive Stakeholder Comments*

BOARD ACTION: No Formal Action. Staff Presentation and Oral Comments for Consideration in Development of Potential Regulatory Approaches

BACKGROUND: Central Valley Water Board staff are developing a proposed amendment to the Basin Plan for Regional Board consideration to establish a control program for pyrethroid pesticides that addresses waterbodies that are listed as impaired by pyrethroid pesticides on the Clean Water Act Section 303(d) list, as well as potential future impairments. Pyrethroid pesticides have both urban and agricultural uses and are widely used throughout the Central Valley. There are currently 14 waterbodies that are impaired (listed on the 303(d) list of waters not meeting water quality standards) due to pyrethroid pesticide concentrations in sediment and/or water. Pyrethroid pesticides have also been identified as a potential concern for aquatic life in the Delta. The 2014 Delta Strategic plan included a goal to amend the Basin Plan to include a control program to reduce pyrethroid insecticide concentrations in sediment and water in the Delta to safe levels.

The overall goal of the Pyrethroids Basin Plan Amendment project is to establish clear requirements for the control of pyrethroid pesticide discharges in the Sacramento and San Joaquin River watersheds, including the Delta, in order to reasonably protect beneficial uses. Specific objectives identified by staff are to 1) establish clear, measurable objectives or targets for pyrethroid concentrations in waters of the State, 2) address existing impairments due to pyrethroid pesticides through total maximum daily loads (TMDLs) or other means, 3) enact reasonable and attainable implementation provisions to achieve the target pyrethroid concentrations, 4) establish an efficient process to address future impairments, and 5) include provisions for addressing alternative pesticides.

The main sources of pyrethroids to surface waters are urban runoff and agricultural runoff. Wastewater treatment plant effluents are known to contain pyrethroids, but typically at levels much lower than found in urban or agricultural runoff. Wastewater treatment plants do not discharge to any of the waters currently known to be impaired by pyrethroids.

Pyrethroid pesticides are toxic to aquatic organisms at very low concentrations. In some cases the level at which they are toxic is below current analytical detection limits. Pyrethroids tend to bind to bed sediments and suspended solids rather than remain dissolved in the water column. When they are bound, their toxicity to aquatic organisms is reduced because they are less bioavailable. However, bed sediments have been found toxic to the aquatic invertebrate test organism *Hyalella azteca* due to pyrethroid residues.

The Pyrethroid Basin Plan Amendment has been in development since 2012. During that time, staff has held six stakeholder meetings at which regulatory approaches, technical issues and preliminary draft Basin Plan Amendment language were discussed.

A scientific peer review of the water quality criteria development portion of the Draft Pyrethroid Pesticides Staff Report by three peer reviewers was completed in July 2015. The peer review comments received were generally supportive; however, some changes to the proposed water quality objective concentrations are under consideration as a result of comments that were received.

Staff is currently evaluating potential implementation alternatives to achieve protection of beneficial uses in a reasonable manner and has scheduled this Board Workshop to hear comments from stakeholders, Board members and the public.

ISSUES:

1. The proposed objectives are low concentrations, many below current commercial analytical detection limits. Many stakeholders have questioned the underlying methodology and data used in the derivation of the criteria, as well as the assumption of additive toxicity used in targets.
2. Many stakeholders question the ecological relevance of the test organism *Hyalella azteca*, which is used in standard sediment toxicity tests, because *Hyalella azteca* is the most sensitive aquatic species used to develop pyrethroid toxicity thresholds. Laboratory cultures of *H. azteca* have demonstrated higher sensitivity to pyrethroid pesticides than some native populations. Native populations demonstrate varying levels of sensitivity that has correlated with pesticide use areas; sensitivity consistent with laboratory cultures in areas without documented pyrethroid concentrations and lower sensitivity (more tolerance) in areas with repeated high pesticide inputs.
3. If the water quality objectives based on the available criteria are adopted, there is uncertainty as to the feasibility of attaining them without a combination of discharger implementation of reasonable best management practices and additional source control efforts. An efficient means of source control is regulation of pesticide use which is under the jurisdiction of the federal Environmental Protection Agency and the California Department of Pesticide Regulation and cannot be changed by local jurisdictions.
4. There may be significant unintended consequences to wastewater treatment plants from the adoption of the proposed water quality objectives and the implementation of those objectives in National Pollutant Discharge Elimination System (NPDES) permits as effluent limitations.

RECOMMENDATION

No Board action is required.

Mgmt. Review __JEC____
Legal Review _____
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