Protecting Water Quality: The Federal and State Clean Water Mandates to Prevent Pesticide Toxicity and the California Water Boards’ Role

Pyrethroid Forum
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Presentation Outline

- Charge of the Water Boards
- What do the data say?
- Regulatory frameworks we use
- Outcomes we would like to see
California’s Environmental Agencies

Cal EPA

- Air Resources Board
- Integrated Waste Management Board
- Dept. of Toxic Substances Control

OEHHA (risk assessment)

Dept. of Pesticide Regulation

State Water Board

- North Coast Water Board
- SF Bay Water Board
- Central Coast Water Board
- Los Angeles Water Board
- Central Valley Water Board
- Lahonton Water Board
- Colorado River Water Board
- Santa Ana Water Board
- San Diego Water Board
Water Boards Protect Water Quality

State Board and 9 Regional Boards

Porter-Cologne Water Quality Control Act & Water Quality Control Plans (Basin Plans)
Water Boards’ Charge =
Protect Beneficial Uses of Waters

Uses for People
- Recreation
- Fishing
- Navigation
- Water Supply

Uses for Wildlife
- Riparian & Wetland Habitat
- Food

Uses for Aquatic Life
- Habitat
- Fish migration
- Spawning
Water Boards’ Authorities

- **Clean Water Act**
  - National Pollutant Discharge Elimination System Permits
  - 303(d) list of impaired waters
  - TMDLs for impairing pollutants

- **CA Water Code**
  - Waste Discharge Requirements (WDRs)
  - Conditional waivers of WDRs

- **Basin Plans**
  - Water Quality Standards
  - Programs of Implementation
  - Prohibitions
  - TMDLs
What do the data say?

■ Clean Water Act Section 303(d) List
  – State periodically (every 2-4 years) assesses water quality data to identify waters not attaining standards

■ In 2006, the State Board identified 2 waters as impaired by pyrethroids
  – Del Puerto Creek, Ingram Creek
    Bifenthrin, lambda cyhalothrin, esfenvalerate/fenvalerate, and permethrin
What do the data say?

- 2 other waters were listed as impaired due to sediment toxicity
  - Chemistry not available at the time
  - Currently updating the 303(d) list

- Future 303(d) Listings?
  - Preliminary review of data suggests up to 24 waters will be added due to sediment toxicity/pyrethroid impacts in the Central Valley (both urban and agricultural runoff dominated waters)
Regulatory frameworks used

- Clean Water Act 303(d) Listing triggers requirement to address the problem

- Basin Plan Amendments
  - Regional Water Board policies, water quality objectives, and regulatory provisions are contained in Water Quality Control Plans (Basin Plans)
  - For pesticides, Total Maximum Daily Loads (TMDLs) have been established
Regulatory frameworks used

- Basin Plan Amendments for pesticides
  - TMDL have been established with responsibility allocated between urban and agricultural sources
  - Numeric water quality objectives have been adopted
  - New regulatory requirements have been put in place (e.g., pesticide management plans must be submitted)
  - Amendments have been implemented to compliment DPR/US EPA pesticide use regulations
Regulatory frameworks used

- Waiver of Waste Discharge Requirements for Irrigated Agriculture
  - Monitoring for pesticides in water and sediment
  - Toxicity testing of sediment and water
  - Two exceedances triggers requirement to submit management plan and conduct additional monitoring
Regulatory frameworks used

- Waste water National Pollutant Discharge Elimination System (NPDES) permit requirements
  - Numeric effluent limits
    » Toxicity
    » Specific pesticides
  - Mandatory penalties for violations
  - Subject to third-party law suits
Regulatory frameworks used

- Municipal stormwater NPDES permit requirements
  - Implement pesticide management plan to control pesticide caused toxicity
  - Control municipal uses
  - “Manage” uses by others

- Other stormwater NPDES permits
  - Industrial and construction sites
  - Caltrans

- NPDES permits for pesticide users?
Outcomes we would like to see

- Complimentary use of state and federal clean water and pesticide use laws to solve pesticide water quality problems
  - Examples
    » Dormant spray regulations by DPR
    » Rice pesticide permits issued by Agricultural Commissioners
    » US EPA / registrant label changes in response to water quality problems
    » US EPA reregistration of cypermethrin limits outdoor applications to impervious surfaces to spot treatment
Outcomes we would like to see

- Registrants to partner with Water Boards, DPR, and dischargers to identify sources and pathways, such as:
  - Applications to and near water
  - Applications involving discharges to drains
  - Applications on outdoor impervious surfaces
  - Cumulative applications that use large quantities of active ingredient
Outcomes we would like to see

- More attention to water quality concerns during the registration process
  - Evaluation of potential impacts from urban storm water and treatment plant discharges
  - Development of toxicity data needed to establish water quality criteria
  - Laboratory methods that allow detection of pesticides at environmentally relevant concentrations
Outcomes we would like to see

- **Avoid**
  - Unnecessary uses
    - Broadcast or calendar-based applications
    - Pesticide – fertilizer combos

- **Minimize**
  - Implement Integrated Pest Management
  - Preformulated (ready-to-use) products

- **Mitigate**
  - Do not apply pesticides when it is raining
  - Detain runoff
Recap

- Water Boards are state water pollution prevention and control authorities.
- Water Boards cannot regulate use of pesticides, but they regulate discharges of pesticides to state waters.
- Pyrethroids are found in creeks.
- Water Boards seek collaboration with DPR, registrants, and dischargers.