Potential Designated Chemicals: Pyrethrins and Pyrethroids

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Overview

- March SGP 2009 meeting
  - All designated pyrethrins and pyrethroids named as priority chemicals for CECBP
  - SGP expressed interest in considering pyrethrins and pyrethroids as a class for designation

- Numerous pyrethrins/pyrethroids registered for use in California but not yet included in CECBP
Chemical identification

- Natural pyrethrins derived from chrysanthemum
- Pyrethroids are synthetic esters with more stable insecticidal properties
- Several metabolites shared among different pyrethrins/pyrethroids
Exposure or potential exposure

- 26 pyrethrins/pyrethroids registered for use in California
- Use is increasing
- Pyrethroids on CDPR Top 100 list for 2007 (agricultural/structural uses)
  - Permethrin (414,000 lbs)
  - Cypermethrin (337,000 lbs)
Exposure or potential exposure

- Household pyrethrin/pyrethroid use increasing
  - Linked to decline of organophosphates and carbamates

- American Healthy Homes Survey found 17 pyrethroids detected in home floor wipes
  - Permethrin detected most frequently of any pesticide tested
  - Permethrin and cypermethrin detected at the highest concentration of any pesticide tested
Known or suspected health effects

- Carcinogenicity
  - Resmethrin* – “known to cause cancer” (Prop 65)
  - Permethrin* – “likely to be carcinogenic to humans” (U.S. EPA)
  - Bifenthrin, cypermethrin*, tetramethrin – “possible human carcinogens” (U.S. EPA)

- Evidence for endocrine disruption (report for EU)
  - Bifenthrin
  - Bioallethrin
  - Cyhalothrin
  - Cypermethrin*
  - Deltamethrin*
  - Fenvalerate
  - Permethrin*
  - Pyrethrin*
  - Resmethrin*
  - Sumithrin

* Priority chemical for the CECBP
CDC biomonitors a number of pyrethrins and pyrethroids, which are CECBP priority chemicals

Numerous others registered for use in CA, use is increasing, new products likely

Pyrethrins/pyrethroids have structural and toxicological similarities and share metabolites

Designating pyrethrins and pyrethroids as a class would allow consideration of possible priority chemicals in an efficient manner