

Consistent Risk Assessment for Pesticide Exposures

PPDC Meeting

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OPP Proposed Policy December 2009:
***Revised Risk Assessment Methods for Workers, Children
of Workers in Agricultural Fields, and Pesticides with
No Food Uses***

- Strengthen and improve the consistency in the risk assessment process for all pesticide exposures
 - Consistently apply risk assessment techniques developed in FQPA 1996 implementation
- Address environmental justice concerns and improve children's health protections for pesticides.
 - Farm workers, farm children
- Applies to agricultural, antimicrobial and biochemical pesticides
- Phased Implementation

OPP Proposed Policy December 2009

Workers/Non-Food Use Risk Assessment

Overview

- Consistent application of uncertainty factors to protect children as scientifically appropriate, where the available data are incomplete or otherwise warrant its application;
- Consider aggregate exposures to pesticides from multiple sources for worker and non-food use assessments;
- Consider cumulative effects that may occur from exposure to multiple pesticides with a common mechanism of toxicity for workers and children in agricultural fields;
- Report potential risks for individuals who had not been explicitly considered, specifically youth workers, and young children taken into agricultural fields while their parents work; and
- Evaluate by-stander exposure to children and adults from spray drift and/or volatilization.

UF in Worker/Non-Food Use Assessments

Proposed Policy:

- Consistent application of uncertainty factors to protect children
 - Consistency for pregnant/nursing women in residential and occupational settings
 - Consistency for children (e.g., turf exposures for food and non-food use pesticides)
- Not a default 10X to all worker/non-food use assessments
- Workers/Non-food use assessments still regulated under FIFRA (Risk/Benefit).

Consistent Application of UF

- **One of several, generally 10-fold factors:**
 - Intraspecies – variability among humans
 - Interspecies – extrapolating animal data to humans
- **UF to protect children (fetus, infant, child) (considered in FQPA SF):**
 - LOAEL to NOAEL,
 - Subchronic to chronic,
 - Incomplete database,
 - Comparative sensitivity in young (e.g., CCA),
 - Exposure data are inadequate to assure the RA is protective (rare),
 - Hazard data are inadequate, but a specific study to address the inadequacy is not available.
- Maximum UF= 3000

Aggregate Risk in Proposed Policy

- Consider aggregate exposures to pesticides from multiple sources (e.g., food, drinking water, residential, or occupational) for worker and non-food use assessments;
- Current worker assessments only evaluate dermal and inhalation exposures and would be modified to also consider food and drinking water exposures as appropriate;
- Children's exposures from non-food uses (e.g., turf, indoor uses) would be aggregated to consider all potential exposures (including drinking water, if appropriate)
- Implications:
 - Aggregation of worker/children exposures may result in greater risk estimate, but will better reflect reality (e.g., workers eat too).
 - For workers, likely that risks will be dominated by occupational exposures (i.e., food/water small risk contributor)

Cumulative Risk In Proposed Policy

- For workers and children in agricultural fields consider cumulative effects that may occur from exposure to multiple pesticides with a common mechanism of toxicity
 - Organophosphates (OPs)
 - N-methyl carbamates (NMCs)
 - Triazines
 - Pyrethroids
 - Chloroacetanilides (alachlor, acetochlor, butachlor).
- Common mechanism group guidance document that received public and SAP review

New Scenarios: Youth Workers and Farm children

Evaluate pesticide exposures to:

- Adolescent workers age 12 – 17, who are legally allowed to work in agriculture, and child workers < 12 yrs who work on family farms
 - 26 youth worker studies and scientific literature
 - Preliminary evaluation indicates current worker exposure assessment methods protective of younger workers (12+ yrs)
 - Consider if existing hazard assessment (POD/UF) is protective of youth workers
- Young children taken into agricultural fields while their parents work
 - 100+ literature studies related to “farm children”
 - Exposure assessment methods must be developed

New Scenarios: Youth Workers and Farm children

- Risk management conducted under FIFRA (Risk/Benefit).
 - Any exposure related to occupational setting
 - Exposure/risk assessment for youth workers and farm children brought into the fields while their parents work.
- Seeking information on:
 - Prevalence of youth in fields
 - Activities
 - Exposure assessment methodology

By-Stander Exposures

Proposed Policy:


- Evaluate exposure to children and adults from spray drift and/or volatilization
 - December 2009 FIFRA SAP on exposures from volatilization of pesticides;
 - Draft Drift Labeling Pesticide Registration Notice;
 - EarthJustice/Farmworker Justice Petition on Protecting Children from Pesticide Drift.
- By-stander exposure would be aggregated with food/drinking water exposures as appropriate

Public Comments to Date

- 25 Comments as of April 26th:
 - Additional UF to protect children
 - Science Issues
 - Aggregate and cumulative assessments
 - By-stander risk assessment rather than default buffers
 - REIs
 - Data requirements; more animal testing
 - Adolescents are not adults; puberty considerations
 - Farm children
 - Literature studies related to farm children; concerns about exposure, prenatal exposure, delayed effects
 - Legal Issues
 - Improve enforcement of existing laws and WPS
 - Maintain FIFRA risk/benefit standard

Next Steps

- Consider comments from stakeholders, and public (comment period closed April 12)
- Time to implement policy
- Complex science issues to address (aggregate, cumulative, volatilization, farm children)

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- A large, faint, circular watermark of the EPA logo is visible on the left side of the slide, partially overlapping the blue vertical bar. The logo contains the text "ENVIRONMENTAL PROTECTION AGENCY" around the perimeter.
- Docket:
 - EPA-HQ-OPP-2009-0889
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