

Invited Presentation Articles

Technical and Regulatory Perspectives for Mosquito Control Practices and Product Labeling

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What's New with Mosquitocides at EPA?

- Proposed labeling for mosquito adulticide products
- Improved risk assessment methods for adulticides

Draft PR Notice on Adulticide Labels

- Purpose is to improve existing labels by:
 - Clarifying environmental hazard language
 - Clarifying use directions to applicators
- Intended results:
 - Improve mosquito control and protection of public health
 - Minimizing risks of adverse effects

Draft PR Notice Proposals

- Limiting adulticide applications to trained or supervised personnel
- Separate application directions for adulticiding from those for other product uses
- Modify product hazard statements
- Encourage applicators to consult with State or Tribal lead agencies

Draft PR Notice Proposals

- Better define the appropriate droplet sizes for adulticiding
- In instances where public health is at risk, allow applications that may pose higher risks to bees... Balancing public health needs with risks
- Specifying application intervals

Draft PR Notice on Adulticide Labels

- Draft PR Notice released for public comment April 2004
- Comment period closed July 2004
- 88 comments received from
 - Applicators
 - States
 - Environmental groups
 - Concerned citizens
 - Pesticide registrants
- EPA is presently reviewing comments

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Draft PR Notice:

More on Droplet Size...

- 'Drift' or 'Deposition' mitigation?
- One goal is to better define the appropriate droplet sizes for adjuvanting
- Droplet size is very important for
 - Efficacy
 - Minimizing environmental impacts
- Droplet size specifications are frequently absent or inadequate on product labels

Draft PR Notice:

More on Droplet Size...

Specific proposal for labels:

“Equipment should be calibrated so that no more than *[percentage to be provided by registrant]* % of the spray volume is contained in droplets larger than 50 microns (μ m) in diameter and no more than *[percentage to be provided by registrant]* % is contained in droplets larger than 100 microns in diameter.”

Draft PR Notice:

More on Droplet Size...

- Identifying droplet size on products provides useful information to:
 - Applicators to help make efficacious applications with acceptable environmental risks
 - EPA to perform risk assessment

Draft PR Notice:

Specifying droplet size

Specific proposal for labels:

“...directions from the equipment manufacturer provide the best guidance and should be used for droplet size calibration. Droplet size measurements made by applicators using slides, paper, or other surfaces should not be used in lieu of the manufacturer....”

Draft PR Notice:

Specifying droplet size

- Intended to increase confidence/accuracy in applicator droplet size calibration
 - Impaction methods useful for qualitative measurements
 - Doppler/diffraction methods required for quantitative measurements
- Quantitative measurements other than those made by the “equipment manufacturer” may be acceptable

Ecological Risk Assessments for Adjuvants

- Risk assessments for pesticides that have undergone reregistration are available on OPP's website: <http://cfpub.epa.gov/oppref/rereg/>
- Methods for exposure assessment to adjuvant applications are evolving
- Several pyrethroids are expected to be assessed before 9/2006

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Linking Product Labels to Risk Assessments

- Label directions are used to assess risks of pesticide use
- Mandatory label directions are used to define application conditions
- Important variables generally include:
 - Application rate
 - Timing
 - Frequency
 - Droplet size
 - Wind speed
 - Release height

How are risks assessed?

- Problem Formulation – what effects are most likely?
- Risk = Exposure / Toxicity Level
- Toxicity Levels
 - Pesticide registrants are required to provide toxicity data on mammals, plants, fish, inverts
- Exposure
 - Pesticide registrants are required to supply adequate data on pesticide fate, mobility
 - Data are used to model pesticide concentrations and exposures
 - Monitoring data, when available, are used to supplement modeling

How are risks assessed?

- Screening level assessments
 - Fast and efficient
 - Provide conservative estimates of risk
 - Clear the majority of low risk pesticides
 - Identify pesticides with potentially unacceptable risks
- The screening concept
 - Select high-end exposure value
 - Select high-end toxicity value
 - Calculate high-end risk
 - Is screening level risk acceptable?

Models for Exposure Estimates

- Monitoring data generally provides commonly occurring environmental concentrations
- Models are less expensive than monitoring and can be used to estimate high-end exposure values
- Spray deposition and runoff models are used to assess exposure from aduatic applications
 - PRZM/EXAMS runoff modeling
 - AGDISP spray deposition modeling

How are risks assessed?

- Conceptual models are used to estimate screening-level exposures
 - Aquatic risk assessment
- Farm pond scenario
 - Terrestrial animals
- Fletcher-Kenaga dietary exposure model

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The Farm Pond Scenario

- An important resource for humans, fish, and wildlife.
- Potentially vulnerable to pesticide contamination

Terrestrial Animals –

Dietary Exposure

Estimate concentrations on representative food items for valued wildlife

Risk Management and Product Labels

- Products are evaluated on a case-by-case basis
- Products which present acceptable risks in screening-level assessments require minimal directions
- Products with higher risks may require more specifics on labels to ensure risks are acceptable
 - Label directions are frequently negotiated during a public process including interested stakeholders
 - Label directions must consider state enforcement needs
 - Labels should allow applicators flexibility to achieve safe and economical applications

And in the end...

- Successful vector control
- Good control of nuisance mosquitoes
- Low risk to fish and wildlife