

US EPA ARCHIVE DOCUMENT



NAFTA Technical Working Group on Pesticides
Grupo de Trabajo Técnico del TLCAN sobre Plaguicidas
Le groupe de travail technique de l'ALENA sur les pesticides

Biopesticides Registration Improvement Course

Biochemical Pesticide Classification, Types, & Modes of Action 5.1



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For Conference Purposes Only.
The views in this presentation are not intended to be used to formulate or support any EPA decision or position. Discussion of pesticide products in this presentation does not constitute EPA endorsement of these products.





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- What are Biochemical Pesticides – U.S. Perspective & Bioclassification
- Types of Biochemical Pesticides
- Biochemical Modes of Action
- Resources for Biochemical Classification
- Commonly Seen Problems / Issues



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Biochemicals (40 CFR 158.2000(a)(1)(i –iii)

- Non-toxic mode of action against target pest
- Naturally occurring
- History of exposure to humans & environment demonstrating minimal toxicity
 - semiochemicals (e.g. pheromones)
 - plant/insect hormones and regulators
 - attractants & repellents (non-semiochemical)
 - enzymes



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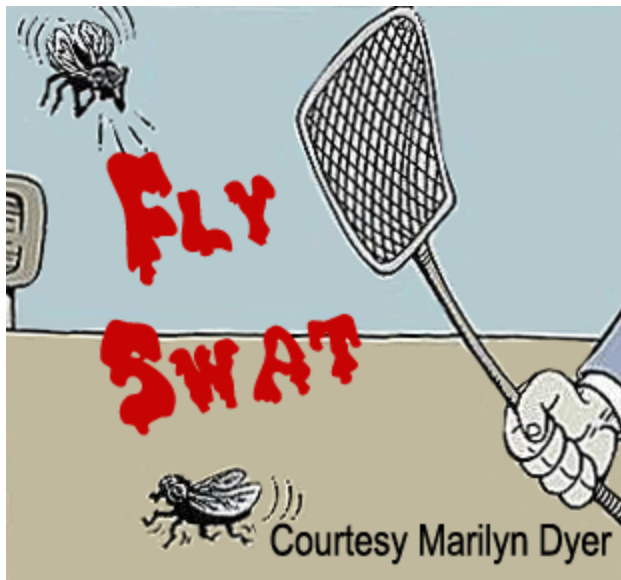
The term “Non-toxic” implies:

- No chemical or biological interaction of the biopesticide molecule occurs with the physiology of the target pest organism such that direct lethality to that pest organism results.



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Non-toxic substances can be lethal





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"Naturally occurring" does not presume a non-toxic mode of action





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Non-Toxic Modes of Action

- Growth/developmental changes (PGRs, IGRs)
- Lures/Attractants/Repellents (Semiochemicals)
- Suffocation
- Desiccation
- Coatings (Irritants & Barriers)
- Induced Resistance (SAR/ISR)-Induction



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**Approximately 200 biochemical pesticide
active ingredients registered by EPA**



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Resources for Biochemical Classification

- **What are Biopesticides**

<http://www.epa.gov/pesticides/biopesticides/whatarebiopesticides.htm>

- **Biopesticide Active Ingredient Fact Sheets**

<http://www.epa.gov/oppbppd1/biopesticides/ingredients/index.htm>

- **New Pesticide Active Ingredients**

[http://www.epa.gov/pesticides/biopesticides/product_lists/new ai 2010.html](http://www.epa.gov/pesticides/biopesticides/product_lists/new_ai_2010.html)

- **Hazardous Substances Data Base (HSDB)**

<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>



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Commonly Seen Problems / Issues

- Mode of Action
not Adequately Described
- Too Much Information Submitted
- Useful Supporting Information
Not Submitted





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Useful (but not required) Supporting Information

- CAS Numbers (if available)
- Chemical Structures
- Human Health or Ecotoxicity Information
- Draft Label
- Efficacy Data
- **DO NOT** submit testimonials!!!!



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photo: Littler & Littler, 2000, Caribbean Reef Plants

