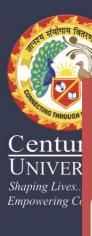


BOTANICALS



What are BOTANICAL insecticides?



Insect toxins derived from certain plants.



Quick action on target pests.



Broad spectrum action (non-selective).



Do not persist in the environment.





PYRETHRIN: BASICS



- Derived from Chrysanthemum cinerariaefolium
- Caution: Do not mix with soap!
- Examples: PyGanic (5% EC, OMRI-approved), EverGreen (6% EC)





PYRETHRIN: TARGET APPLICATION





- Target insects: Aphids, cucumber beetles, caterpillars...
- Best used against small-sized and immature insects.
- Short residual reapply frequently!
- Add synergist like PBO to increase efficacy.





NEEM: BASICS



- · Derived from the seeds of Azadirachta indica.
- Active ingredient is <u>azadirachtin.</u>
- Available as azadirachtin-containing products, oils & soaps.
- Examples: Neemix, Molt-X (farm products), Monterey Neem Oil (garden use)





NEEM: TARGET APPLICATION



- Neem has systemic properties; reduced lettuce aphids on seedlings (Palumbo et al. 2001).
- Best against immature insects as foliar spray.
- Tank-mix & premixes are also effective.





ROTENONE: BASICS



- Derived from Derris roots. Organic approved till 2005.
- Caution: Extremely toxic to fish.
- Products with 1% rotenone are available commercially but are difficult to find.



OTHER BOTANICAL PESTICIDES



- Ryania: Derived from Ryania speciosa
- Slow acting stomach poison.
- Commercial products are difficult to find. Example: Ryanicide with 0.2% ryania (Progressive Agri-Systems, PA).
- Prohibited by NOP.

RYANIA



- Nicotine: Derived from tobacco (Nicotiana tabacum). Formulations may have 40% nicotine sulfate.
- High mammalian toxicity restricts marketing.
- Prohibited by NOP.

NICOTINE



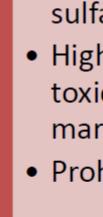


OTHER BOTANICAL PESTICIDES



- Ryania: Derived from Ryania speciosa
- Slow acting stomach poison.
- Commercial products are difficult to find. Example: Ryanicide with 0.2% ryania (Progressive Agri-Systems, PA).
- Prohibited by NOP.

RYANIA



- Nicotine: Derived from tobacco (Nicotiana tabacum). Formulations may have 40% nicotine sulfate.
- High mammalian toxicity restricts marketing.
- Prohibited by NOP.

NICOTINE

