



Centurion
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Shaping Lives...
Empowering Communities...

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.



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PYRETHRIN: BASICS



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





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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.



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NEEM: BASICS



- Derived from the seeds of *Azadirachta indica*.
- Active ingredient is azadirachtin.
- 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.
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NICOTINE





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