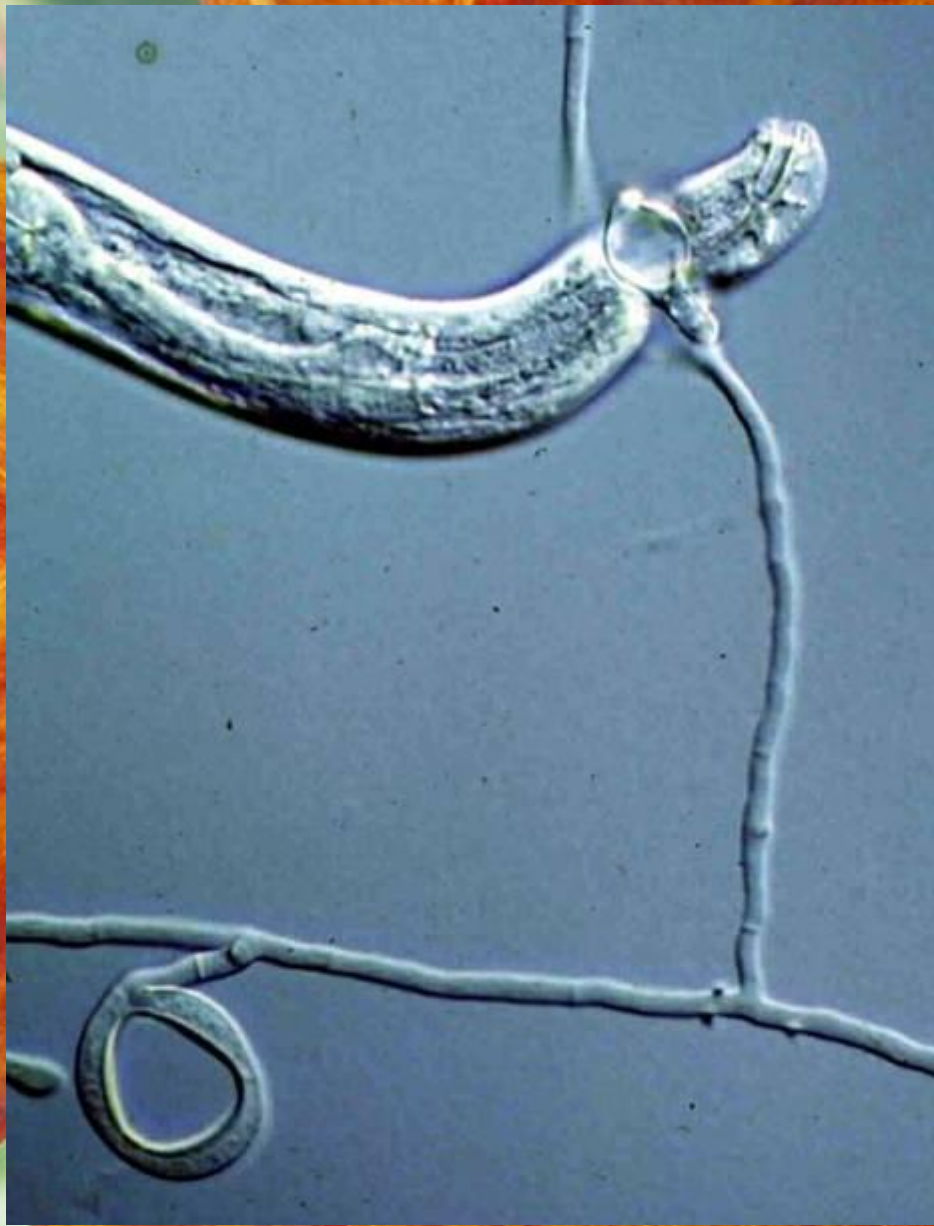




Pest management:
Resistant varieties



ent:

S



Pest Management: Farmscaping



Pest management: Inorganics



- Copper
 - toxicity problems with heavy, prolonged use
- Sulfur
 - 59% of agricultural fungicide use, by weight
 - high ecological impact (Cornell)
- Lime
- Bordeaux mixture (copper sulfate + lime)

Pest Management: Botanicals

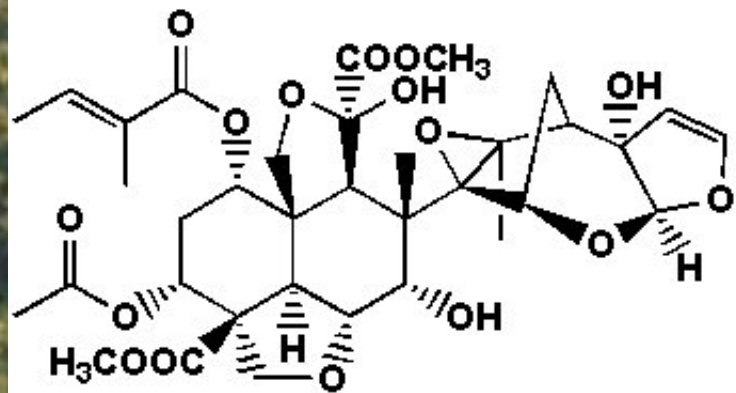
- Chemicals derived from plants
 - Rotenone
 - rat poison, very toxic to fish, linked to Parkinson's
 - allowed under NOP; temporary ban in Europe
 - Pyrethrum
 - neurotoxin, quick knock-down
 - chemistry inspired synthetic pyrethroids
 - Neem
 - inhibits moulting



NEEM: GOD'S GIFT TO MANKIND



Azadirachtin (Azadirachtin A)



$C_{35}H_{44}O_{16}$
Exact Mass: 720.26
Mol. Wt.: 720.71

b)

Pest Management: Microbials

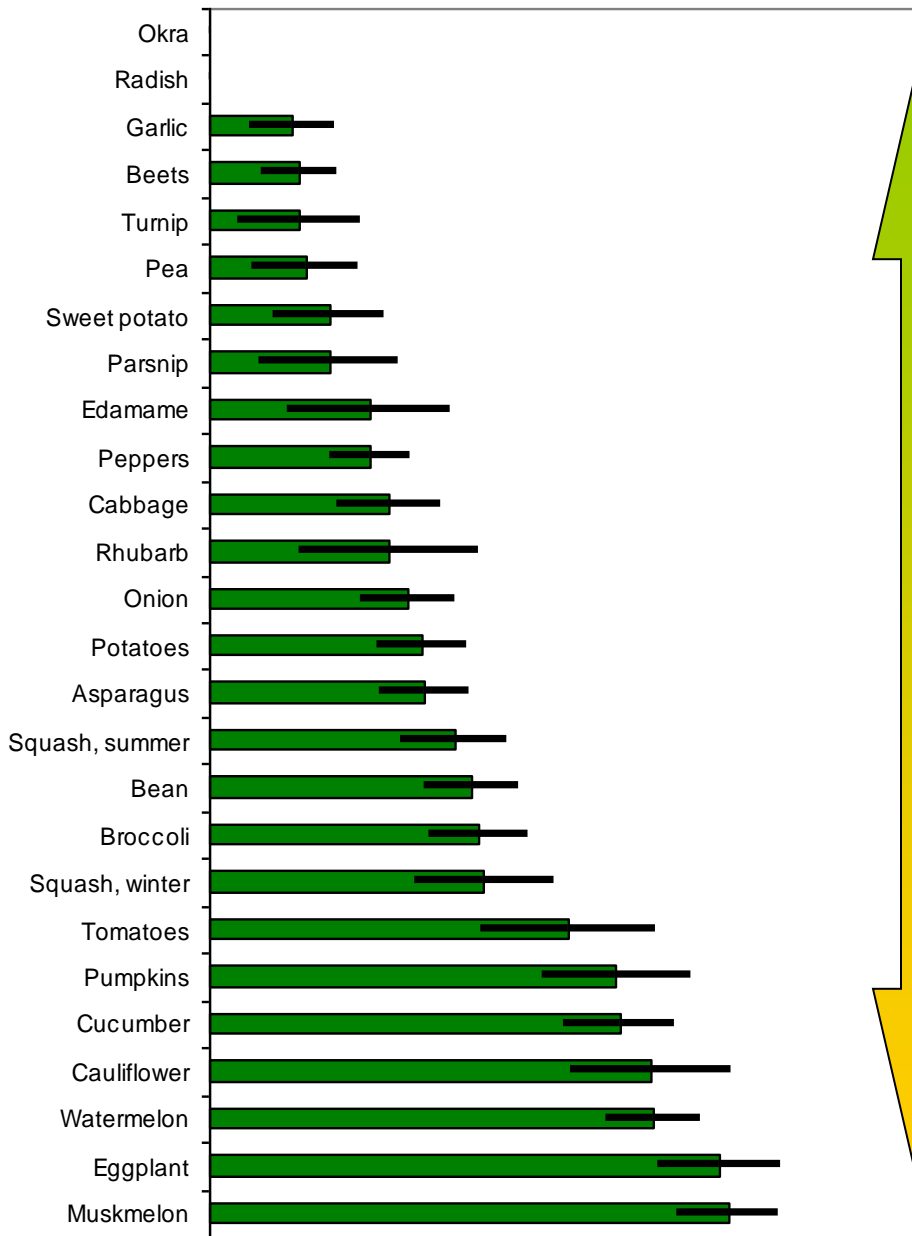


- Bacteria
 - e.g. *Bacillus thuringiensis*
- Fungi
 - e.g. *Coniothyrium minitans*
- Nematodes
 - e.g. *Steinernema*

Pest Management: Oils & Soaps



- Oils
 - Petroleum / vegetable based
 - kill through suffocation
 - most widely used insecticide, by weight
- Soaps
 - kill through desiccation (penetrate protective waxy covering)
 - mainly kill soft-bodied insect
- No resistance observed to these modes of action



Easy to grow organically in KY



Difficult to grow organically in KY

Dr. Michael Bomford
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