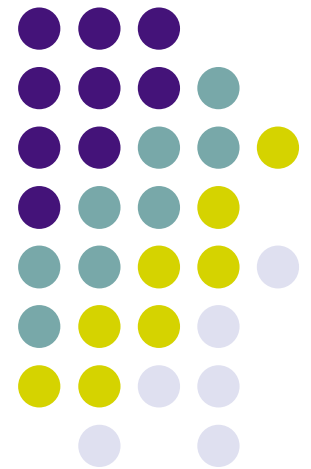


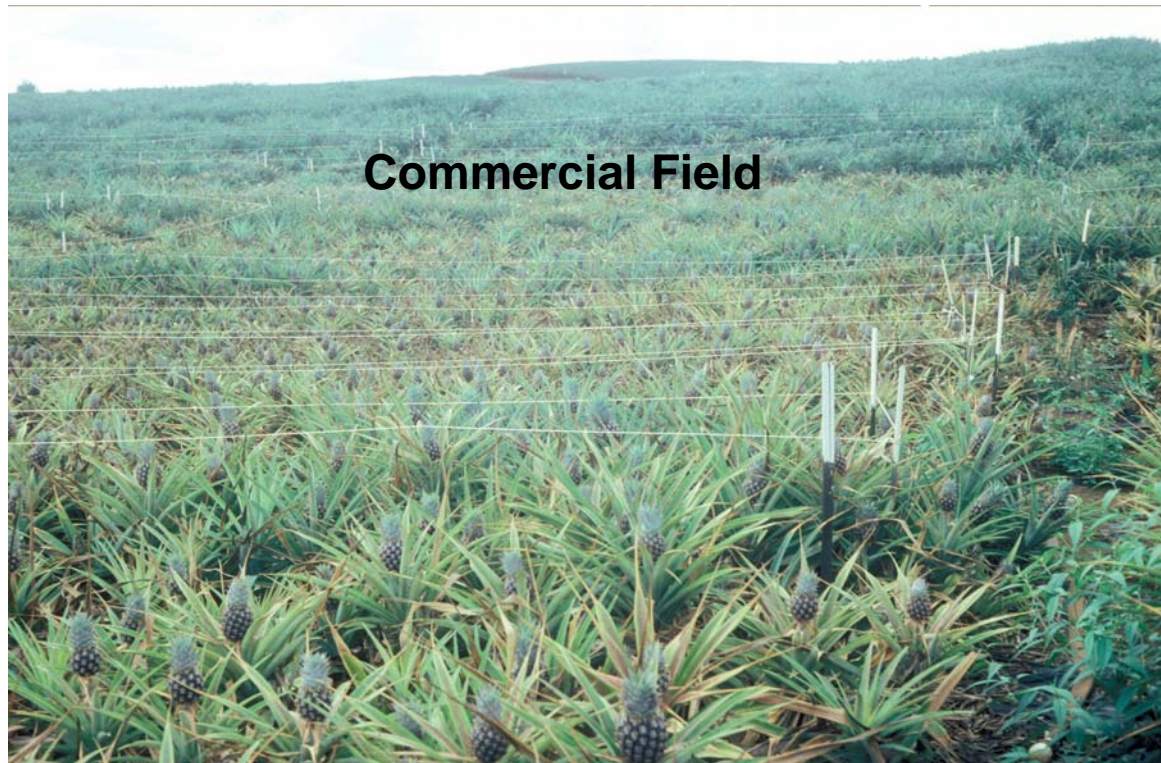
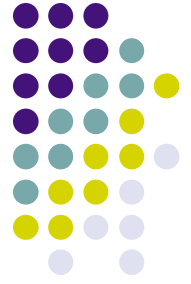
Sustainable Control of Plant-parasitic Nematodes

Brent Sipes

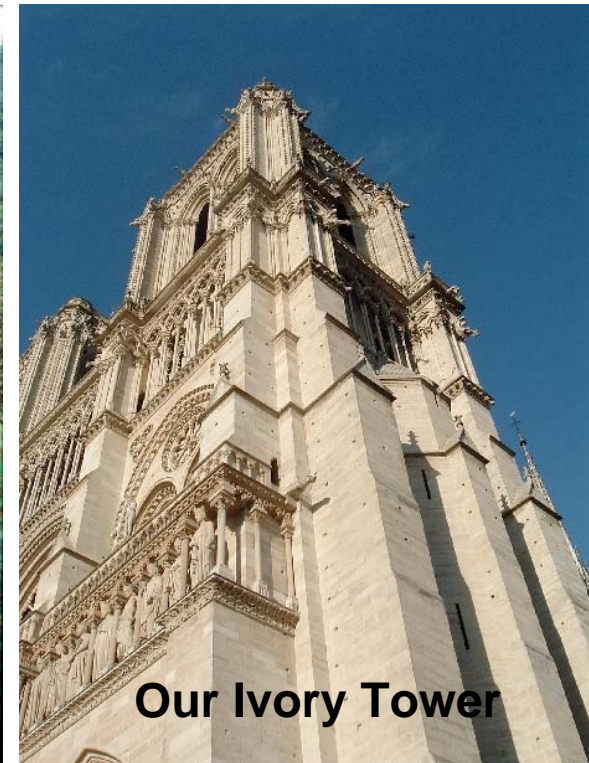


A Pragmatic Approach

Practical as opposed to Idealistic

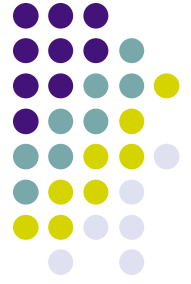


Commercial Field



Our Ivory Tower

Control



- Reducing initial inoculum
- Reducing rate of disease increase
- Exploiting pathogen and host biology

Chemical Control of Plant-parasitic Nematodes

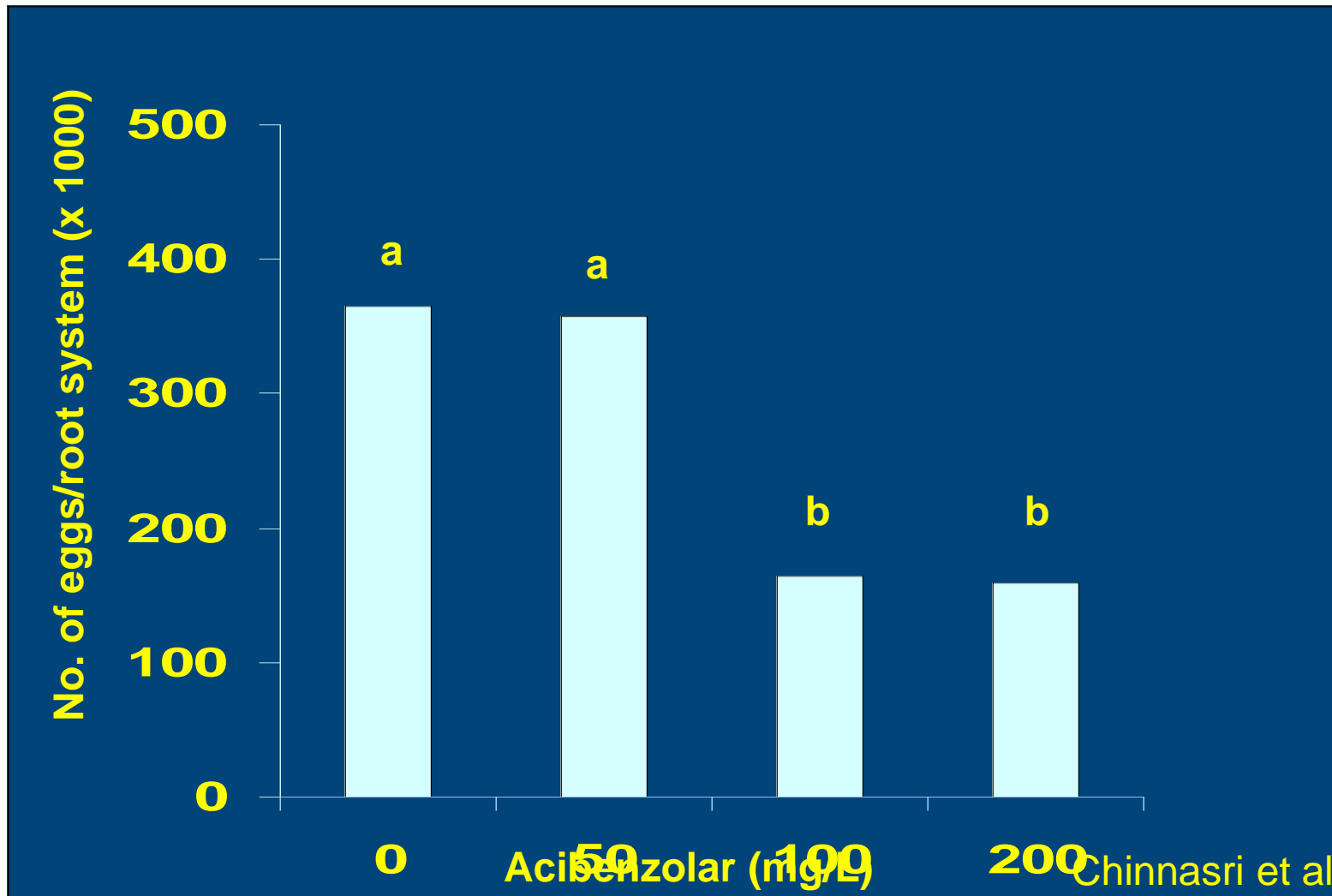


- **Chemicals**
 - 1,3-D
 - Avid/Agromec
 - Pylon
 - Imidaoclorprid
 - Actigard

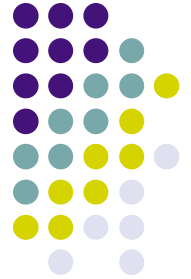




Acibenzolar effects on *M. javanica* infecting pineapple



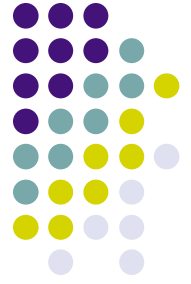
Chemical Control of Plant-parasitic Nematodes



- **Biologicals or Biologically-derived**
 - DiTera
 - Dragonfire
 - Melocon
 - LCF



The Soil-Food Web



- **Cover crops**
- **Soil health**

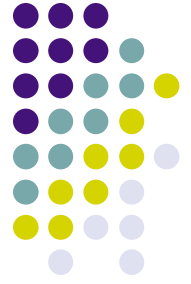


Cover Crops

- Marigolds (*Tagetes* sp.)
- Sunnhemp (*Crotalaria juncea*)
- Sudex grass
- Rape (*Brassica napus*)

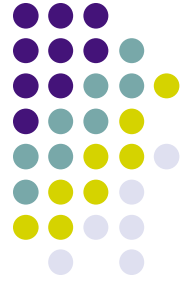


Cover Crops



- Marigolds = good reniform nematode host
- Sunnhemp = low level of rootknot nematode reproduction
- Sudex = good rootknot nematode control
- Rape = good rootknot nematode host

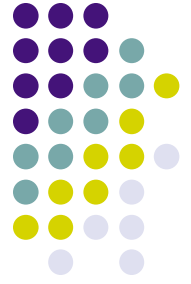
The Soil-Food Web



Measuring Soil Health

- Oligonucleotide Fingerprinting of rRNA Genes
 - Detritus feeders
 - Bacterial feeders
 - Fungal feeders
 - Algal feeders
 - Plant feeders
 - Predators

The Host

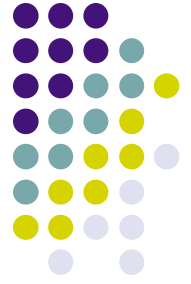


Resistance



A. comosus

Host Resistance



- Natural
- Engineered



Coffee somatic embryos

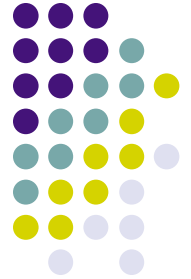
Host and Nematode Biology



Host

- Damage Threshold
- Damage Function

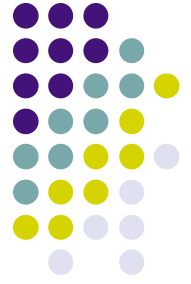
Host and Nematode Biology



Nematode

- Differences among isolates
- Peculiarities in life cycle

The Future



- Quantification of nematode damage in more crops
- Host-plant resistance
- Effective tools for management

Thank You

