

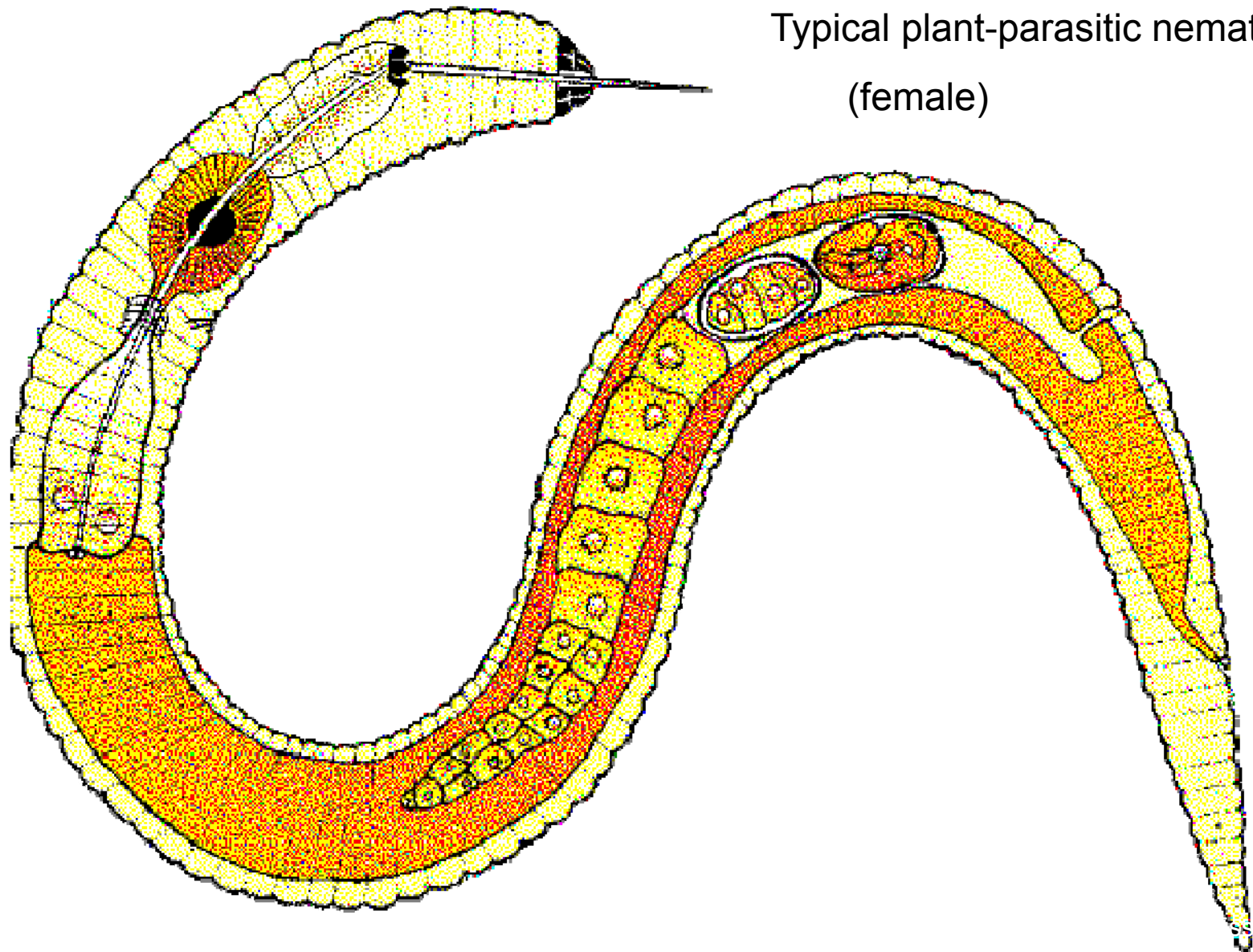
Plant Parasitic Nematode Pests in the Tropics

Buncha Chinnasri & Danny Coyne

AVRDC Vegetable Workshop, October 2015, Bangkok, Thailand



Nematodes



Typical plant-parasitic nematode
(female)

Nematodes - Typical nematode

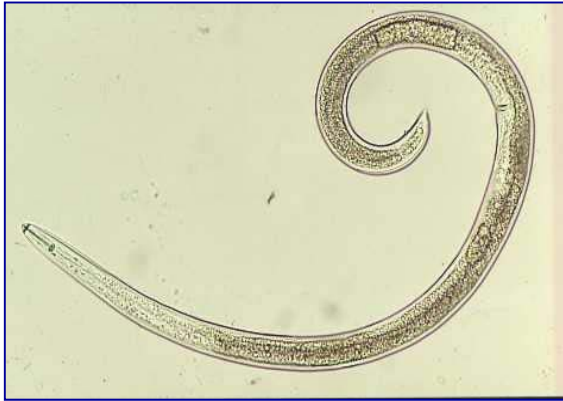


What about nematodes

- Geography
- Biodiversity
- size
- mass
- modes of existence
- modes of survival
- longevity
- genetic information
- etc.



Nematodes - diversity

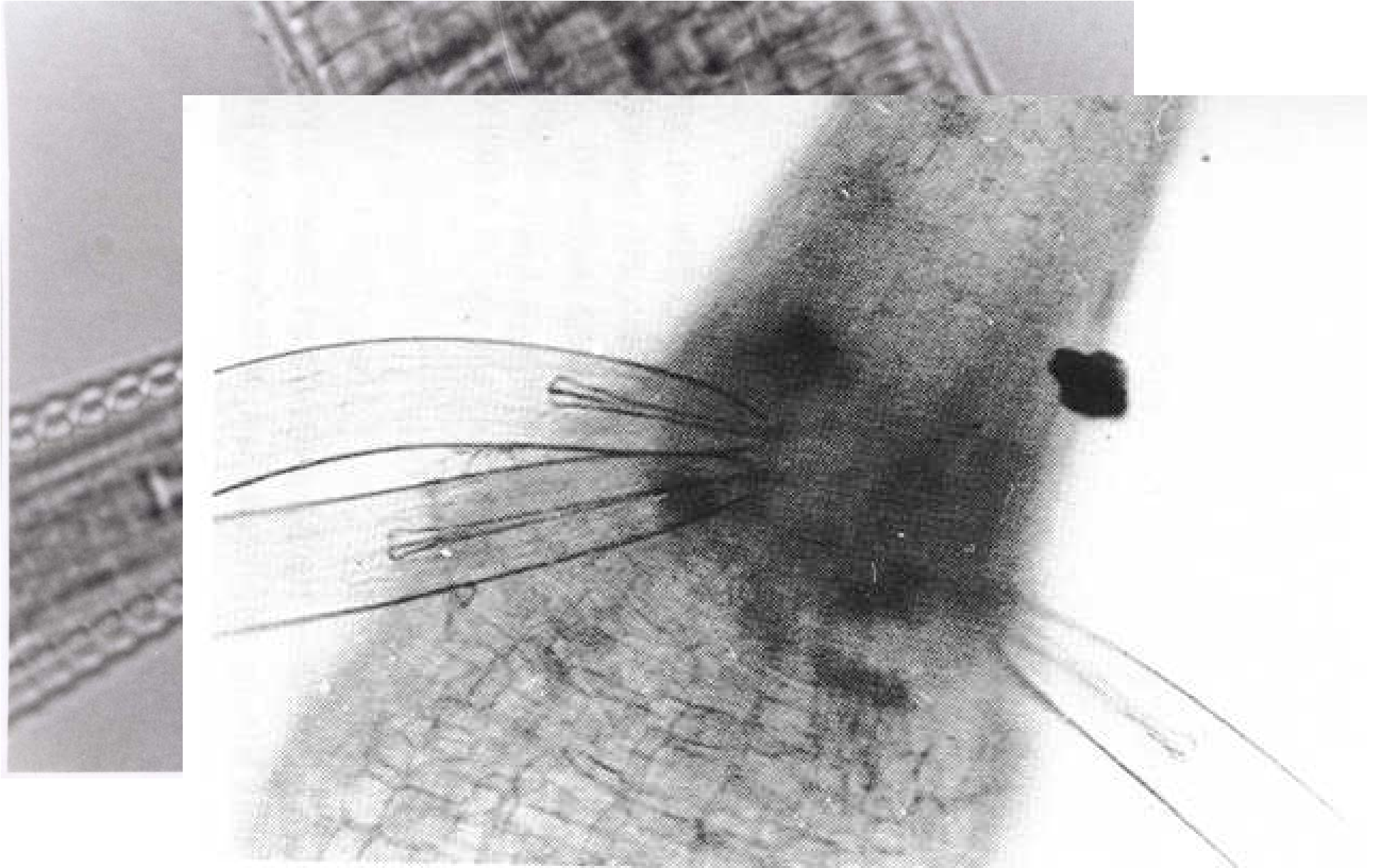


SOURCE: CABI

Feeding types

- Ectoparasites
- Endoparasites

Nematodes - ectoparasites



Endoparasites

- Migratory
- Sedentary

Nematodes - endoparasites

Migratory



SOURCE: CABI

Nematodes - endoparasites

Sedentary



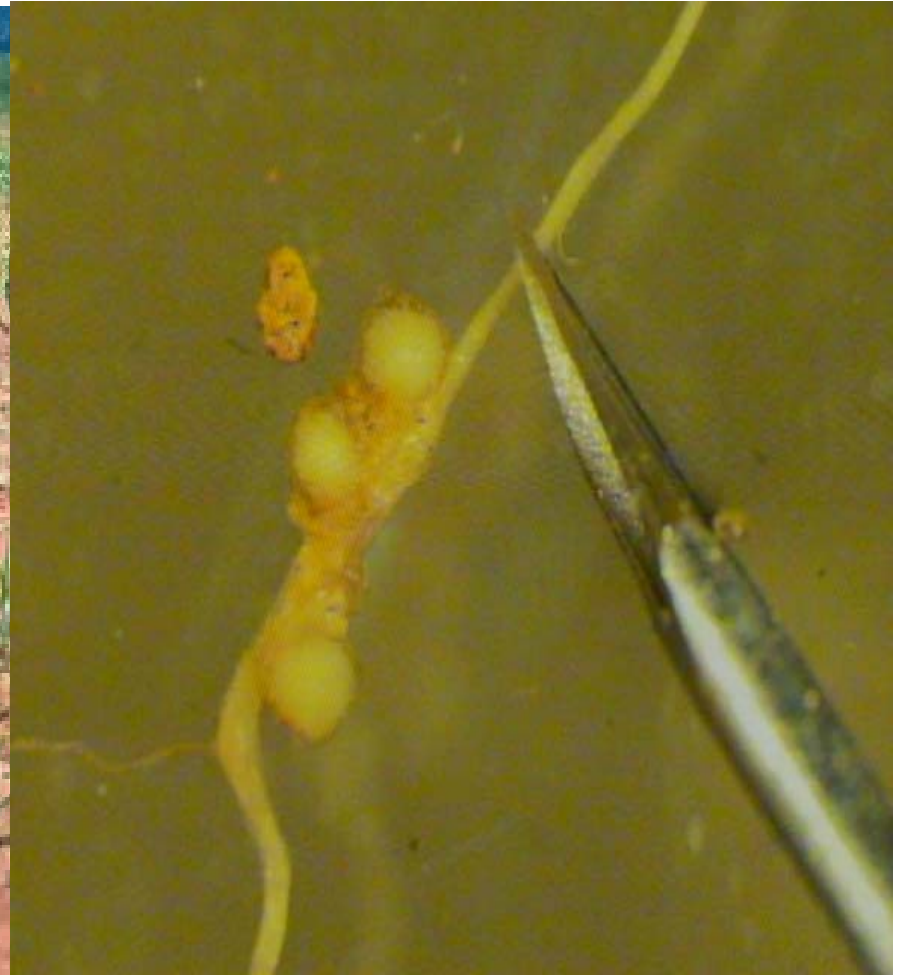
Symptoms and nematodes



Nematodes – RKN



Nematodes – RKN



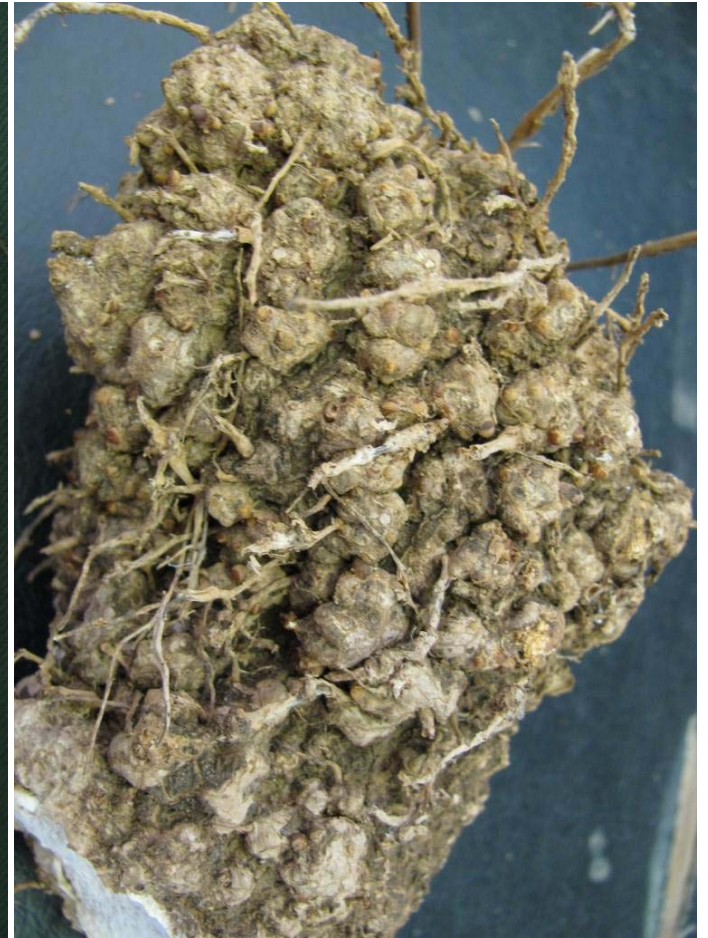
Nematodes – RKN



Nematodes – RKN



Nematodes – RKN





Nematodes – RKN

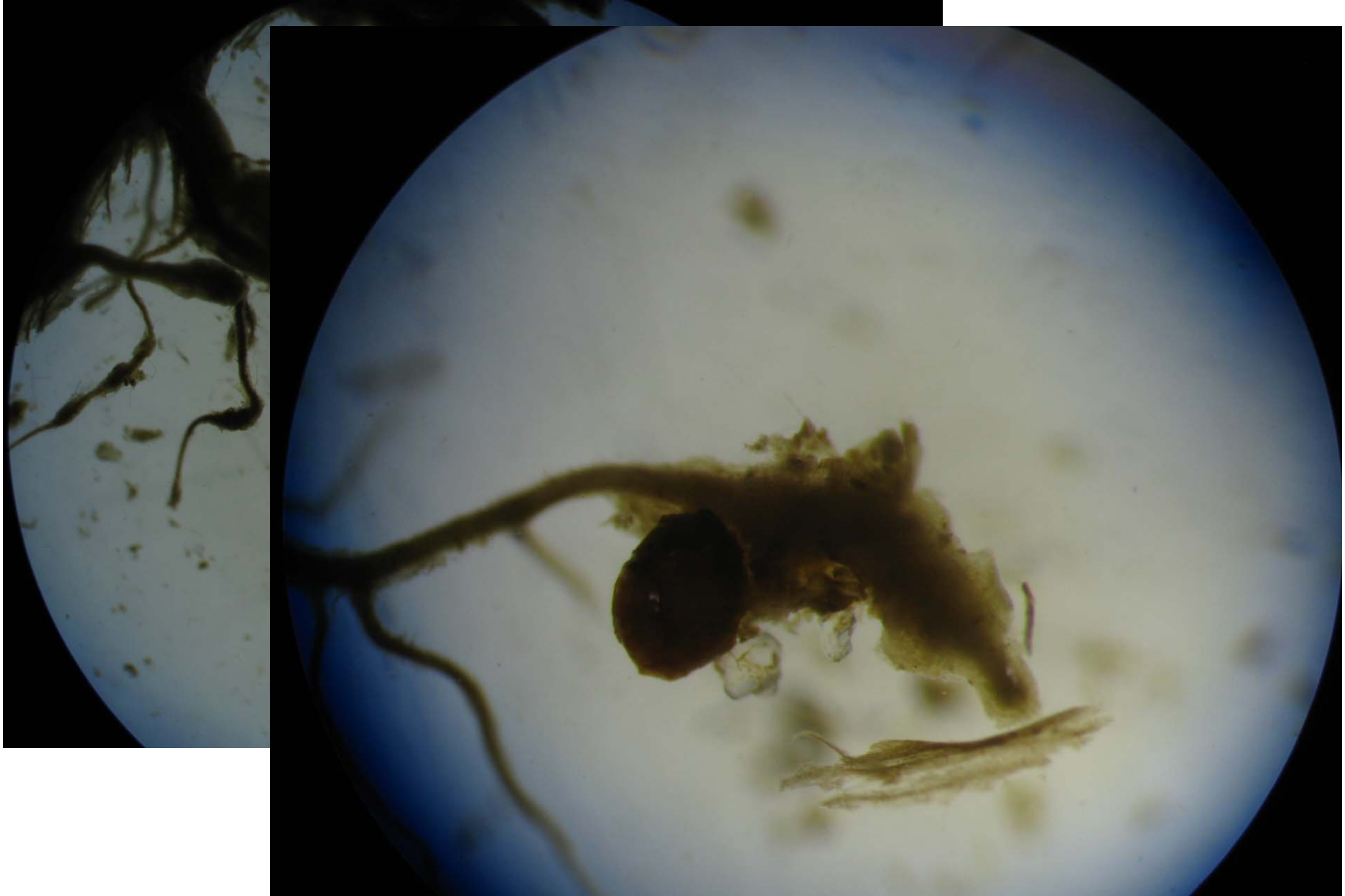


Nematodes – RKN

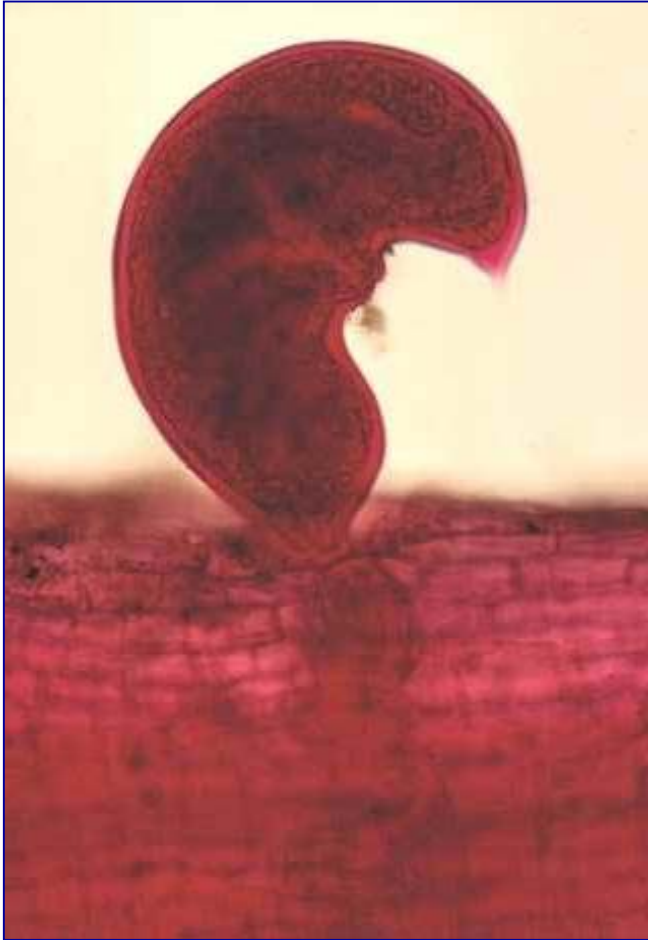
Golf courses



Nematodes – RKN



Nematodes – Reniform



Nematodes – Lesion



Nematodes – Lesion



Nematodes – Lesion



Nematodes – Lesion

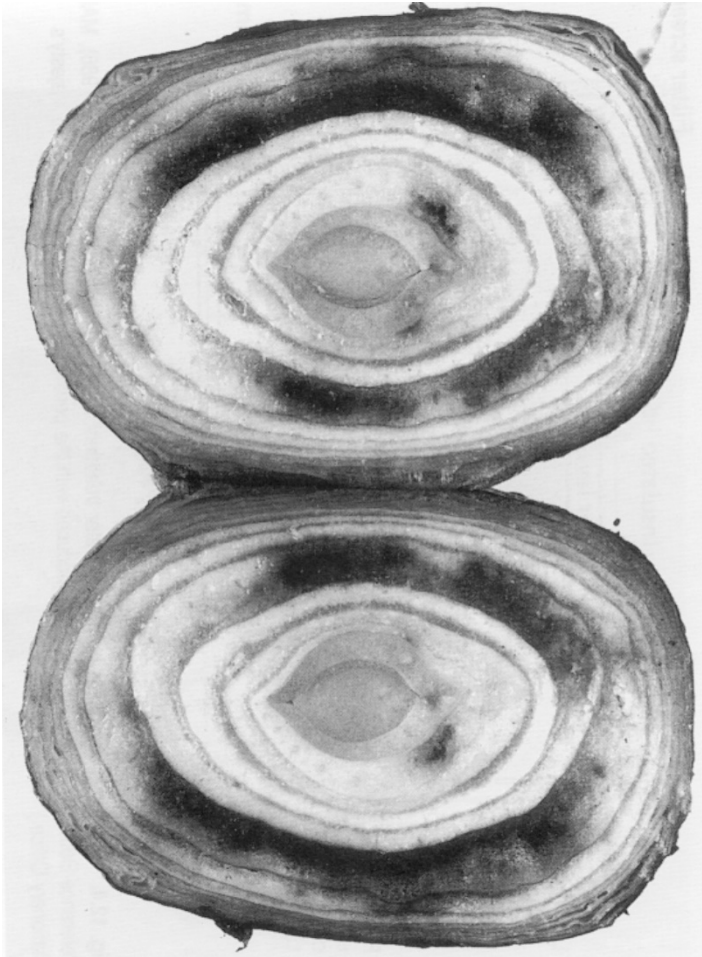


Nematodes – Lesion





Nematodes – Stem



Nema



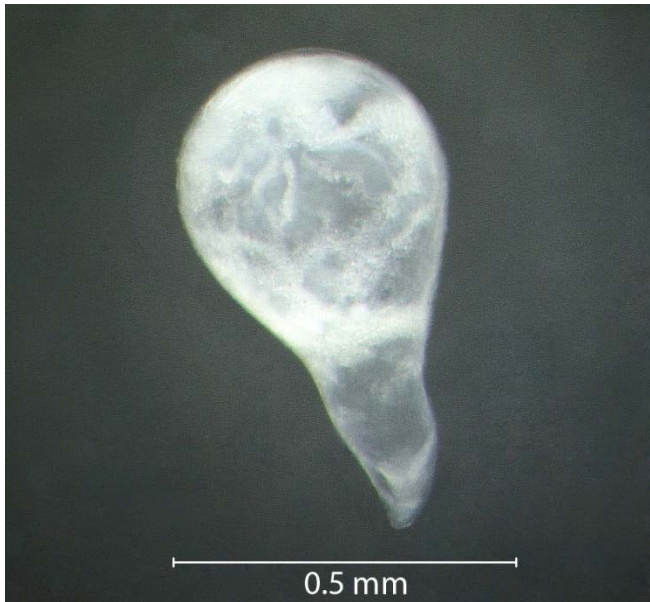
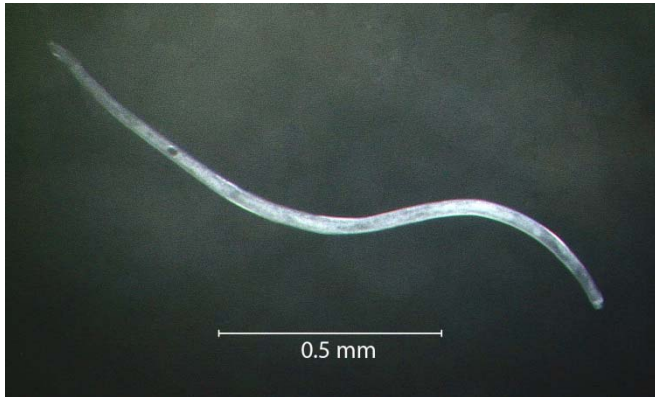
Ne





Importance

pest and disease identification



Importance

pest and disease identification



Early blight



Importance

pest and disease identification



Virus



Importance

pest and disease identification



Root knot
nematodes

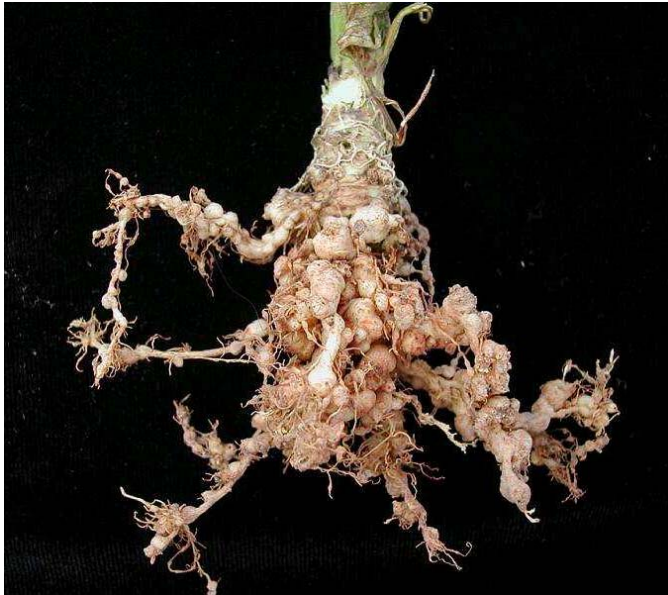


Importance

- Diagnosis
- Interactions

Importance

Interactions

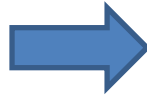
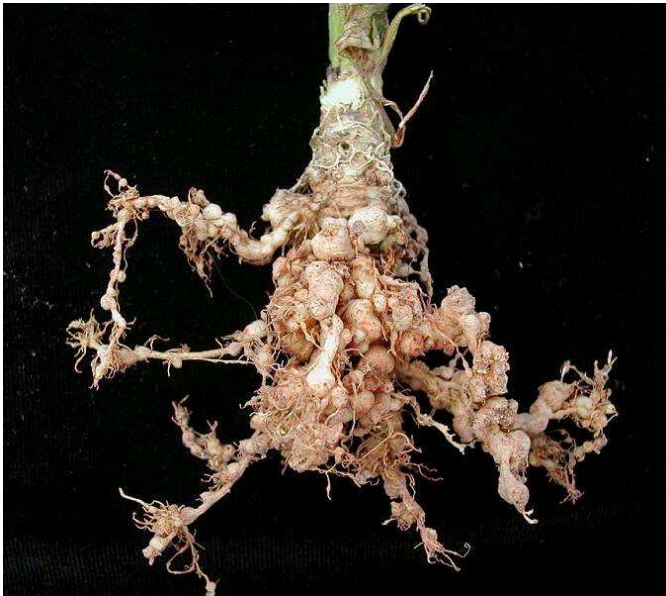


=



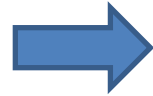
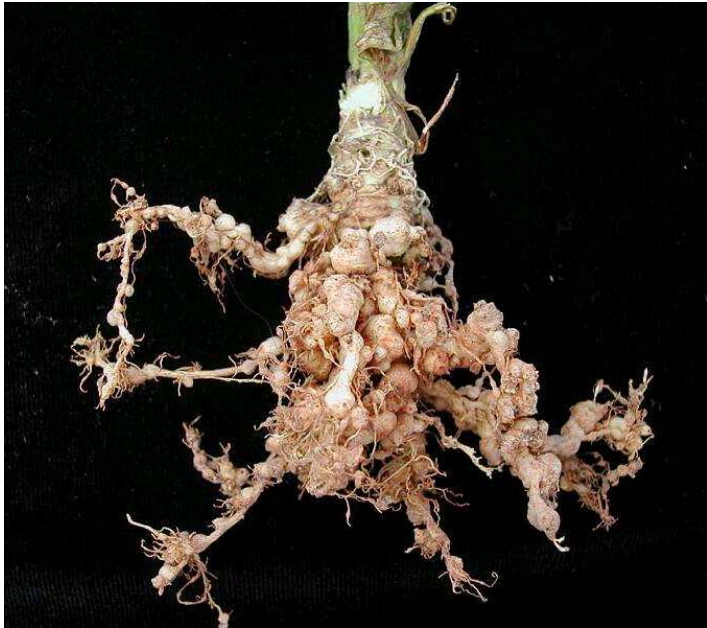
Importance

Interactions

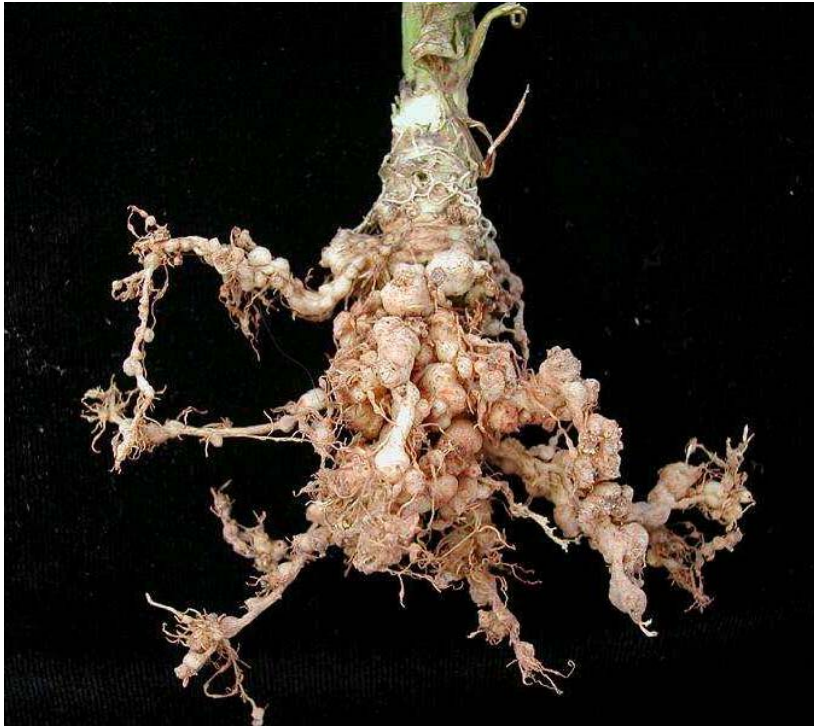


Importance

Interactions



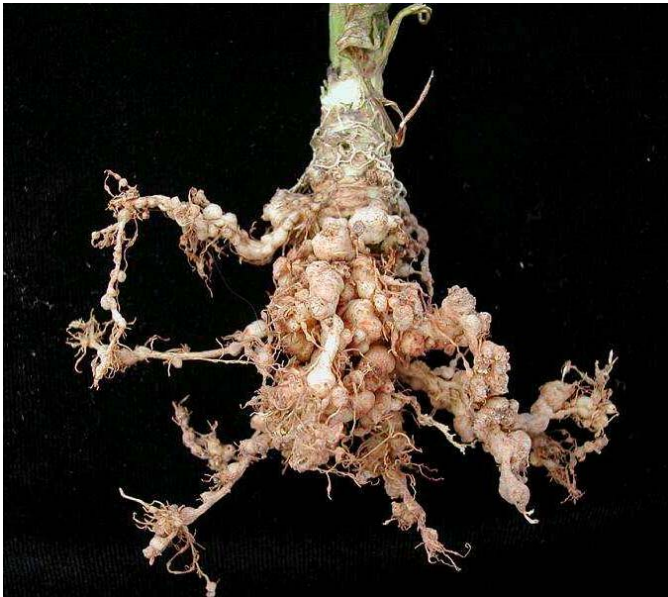
Importance



Interactions

Importance

Interactions



=



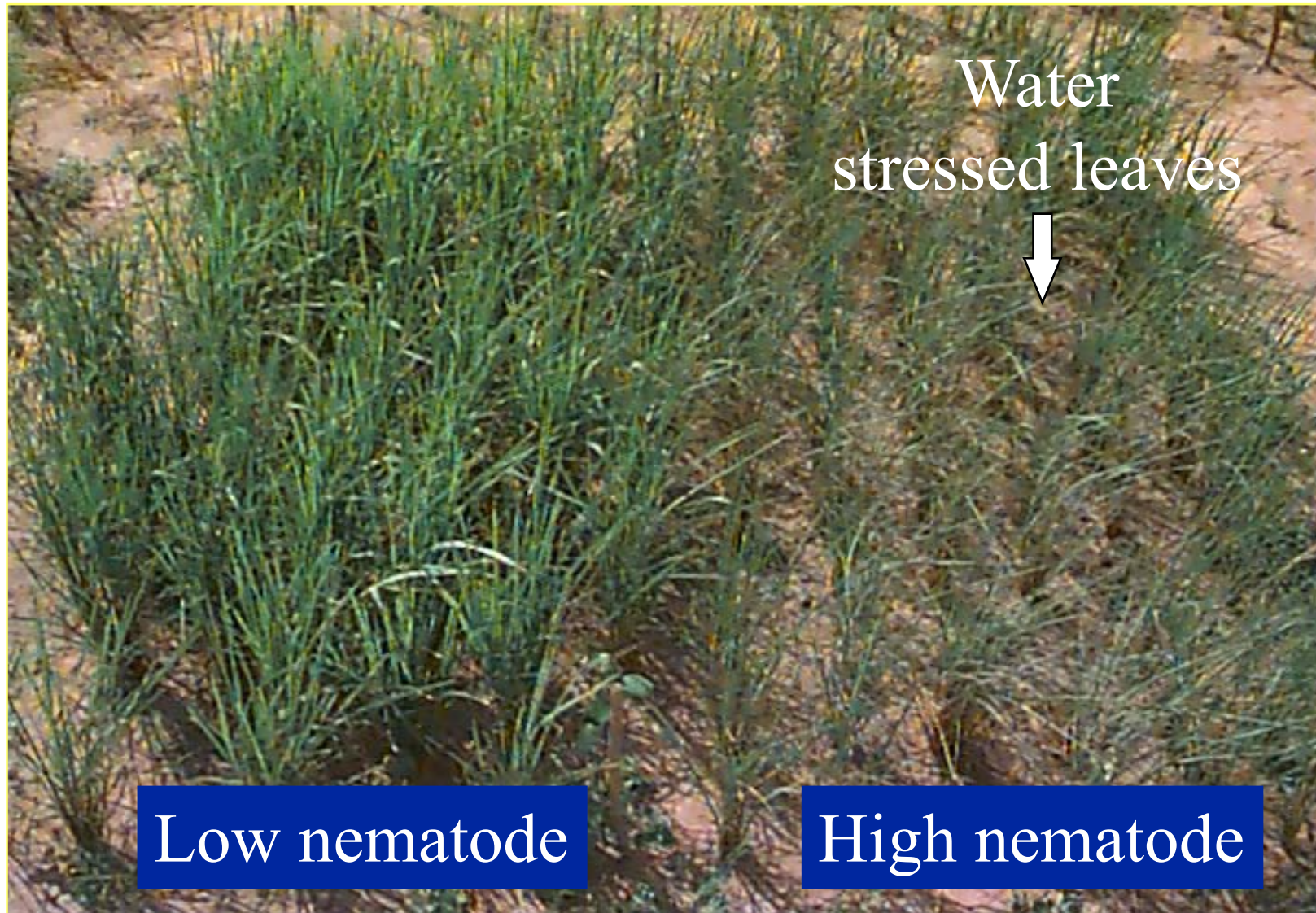
Importance

- Increase other constraints
 - e.g. water, fertility, diseases

Poor soil fertility?



Drought susceptibility?



Rotten yam ?



Carrot ?



Weed infestation ?



Importance

- Diagnosis
- Interactions
- Yield suppression

Yield

Bunch/plant loss – banana field



Yield

Tomatoes – for export





Importance

- Diagnosis
- Interactions
- Yield suppression, losses
- Quarantine

Quarantine



Quarantine



Importance

- Diagnosis
- Interactions
- Yield suppression
- Quarantine
- Ease of management ???

IMPORTANCE

Real issues – environmental cost



IMPORTANCE

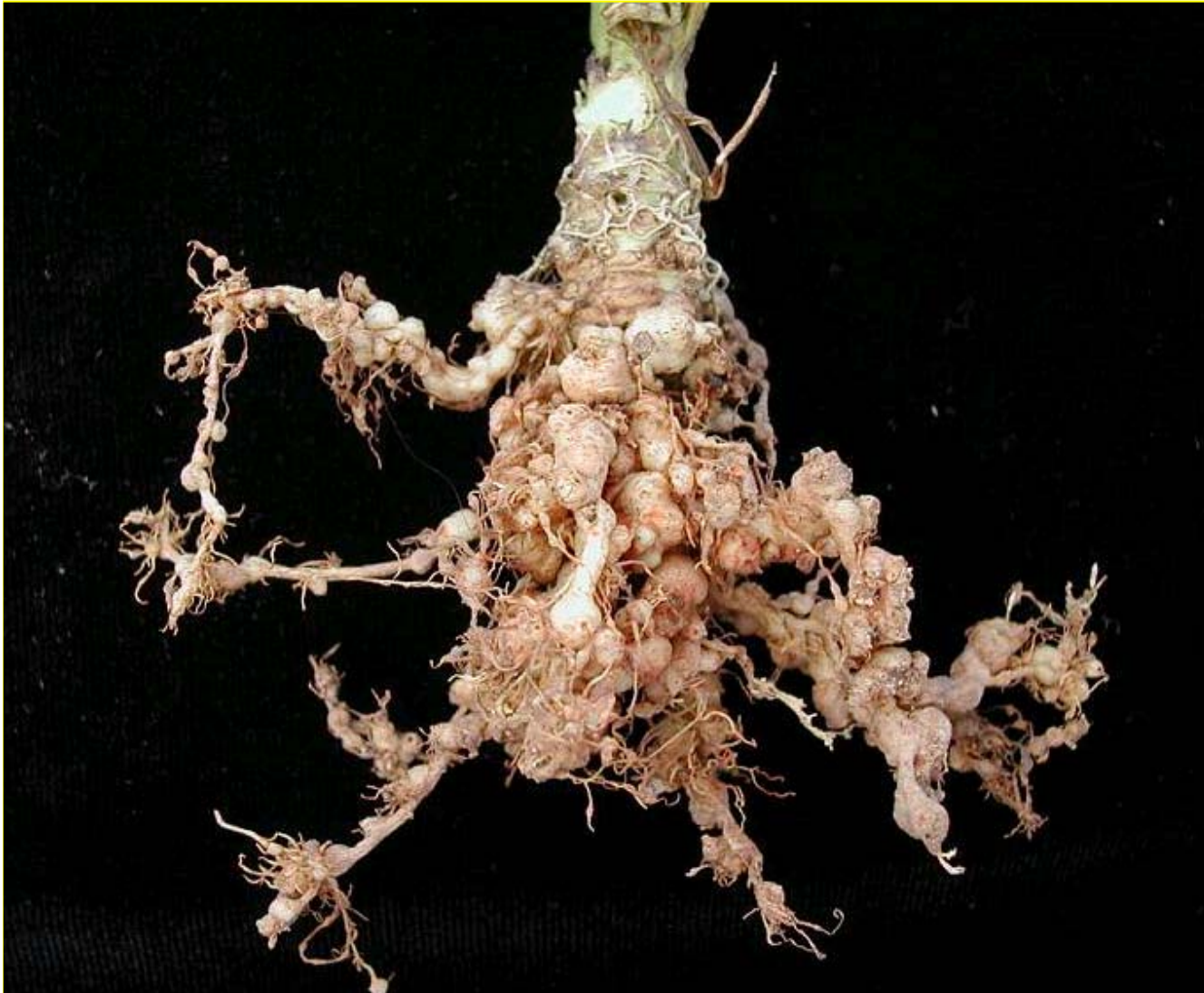
Real issues – importance



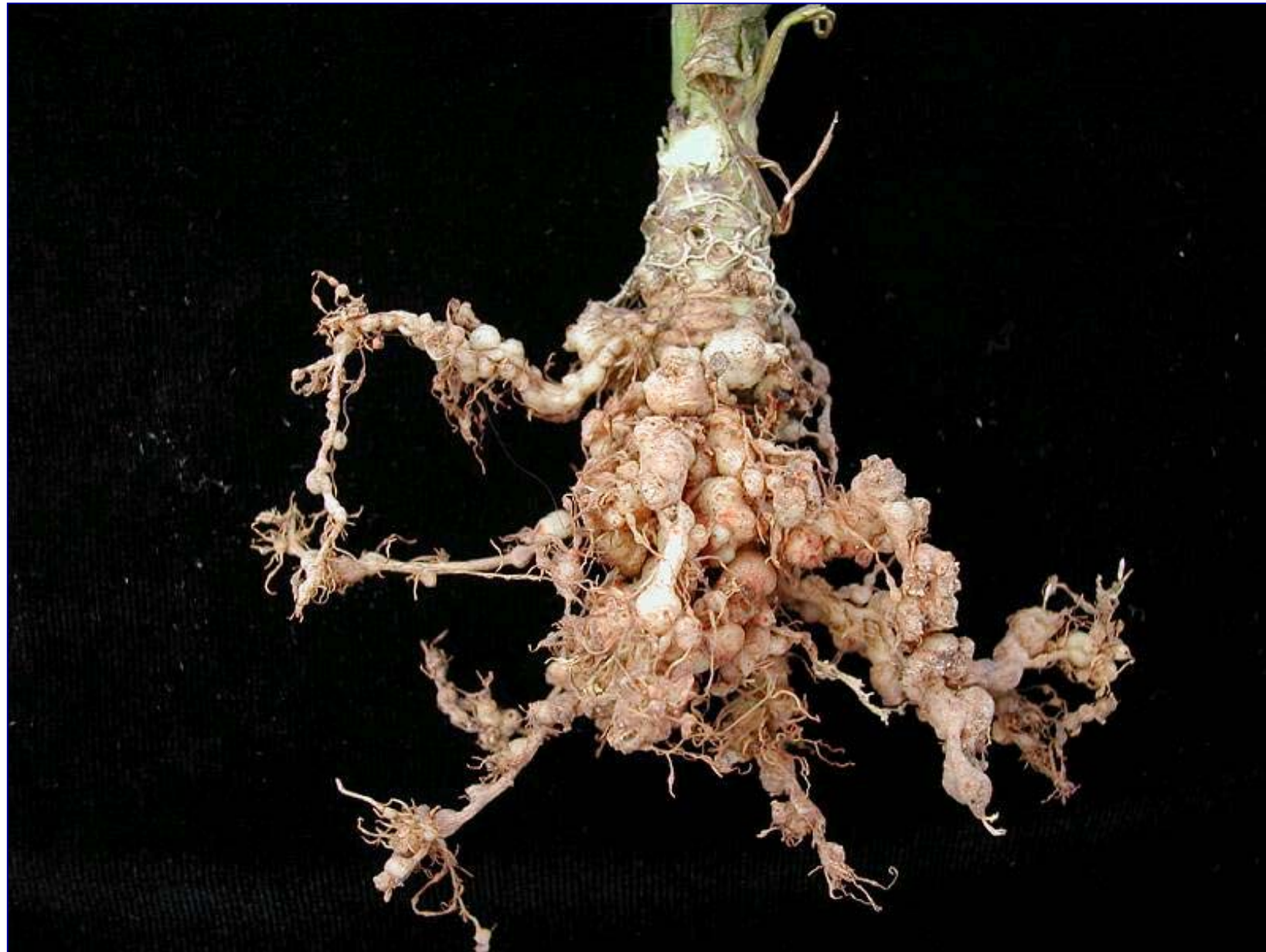
UK = ~\$80 million/ yr

Why bother - IMPORTANCE

Real issues – RKN



\$\$\$\$\$\$
billions



Probably most important TROPICAL biotic constraint

Why be concerned ??

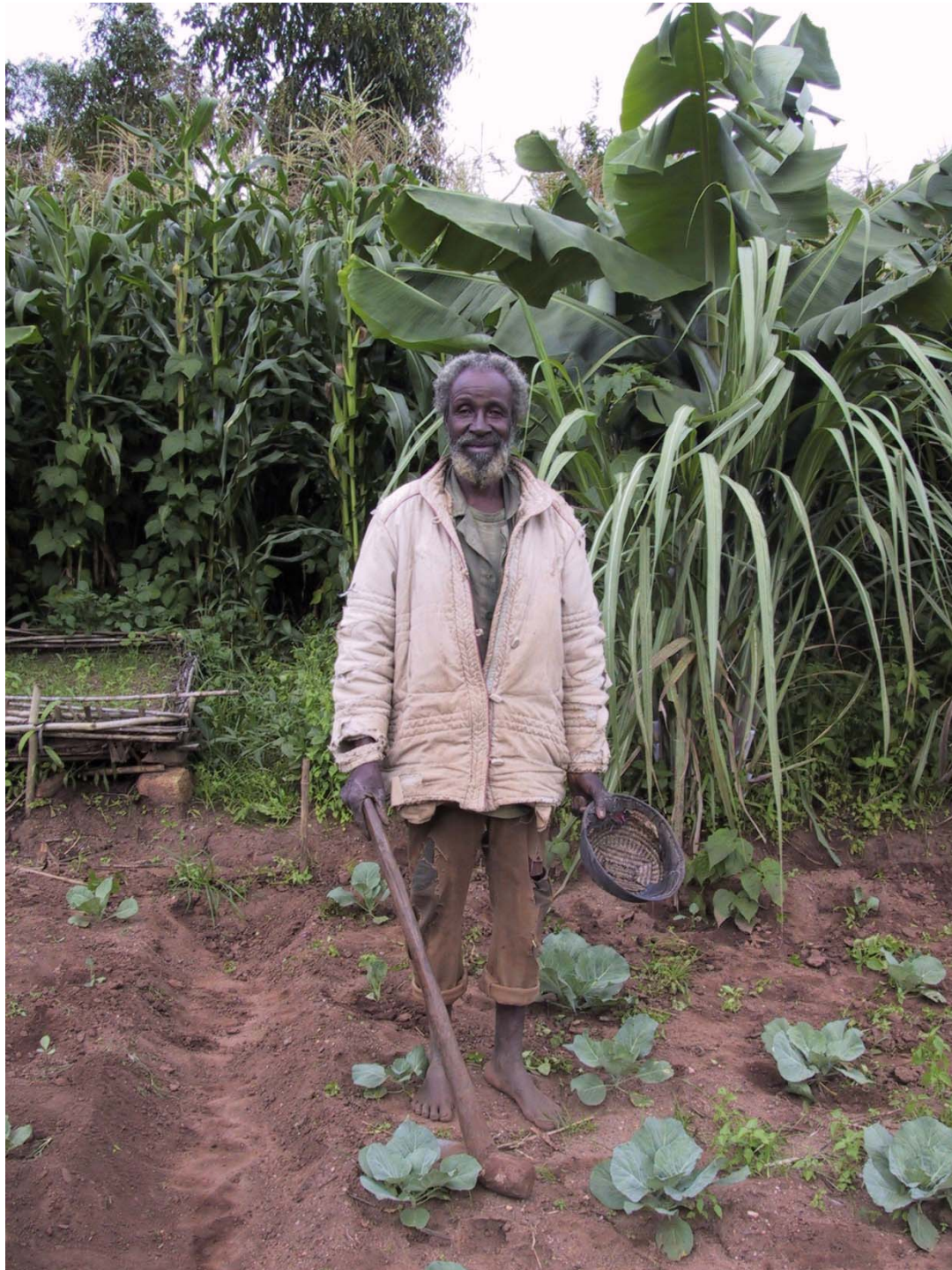


Why be concerned ??



Why be concerned ??





Why be concerned ??

Why be concerned ??





Why be concerned ??

Why be concerned ??







