Workshop on Maintenance of nematodes Collection

European Plant Protection Products

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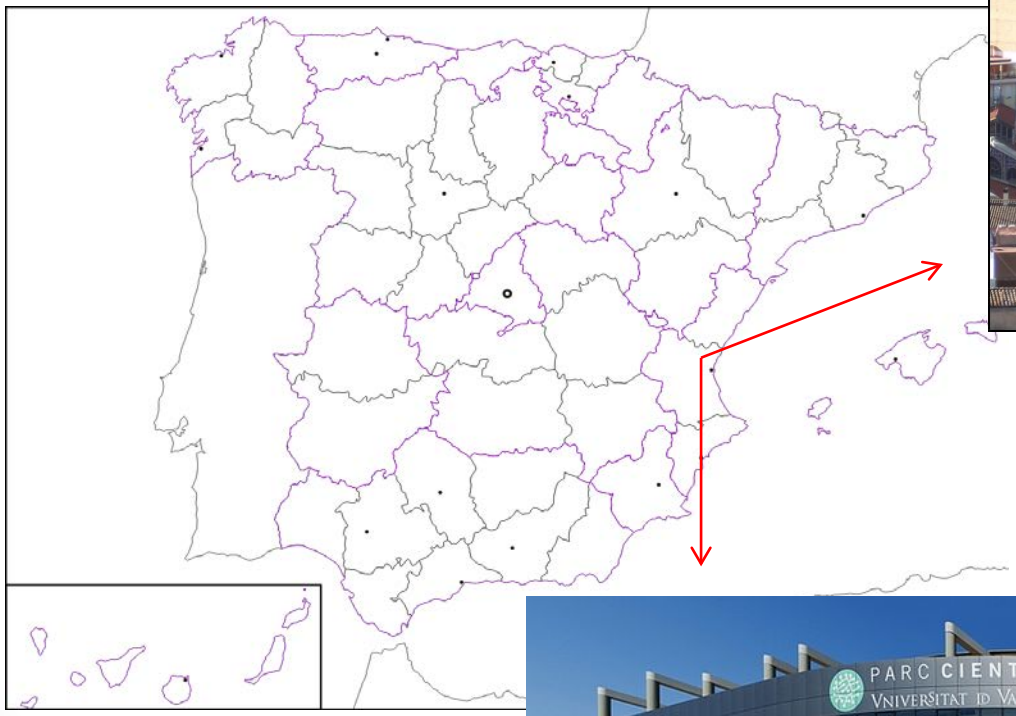
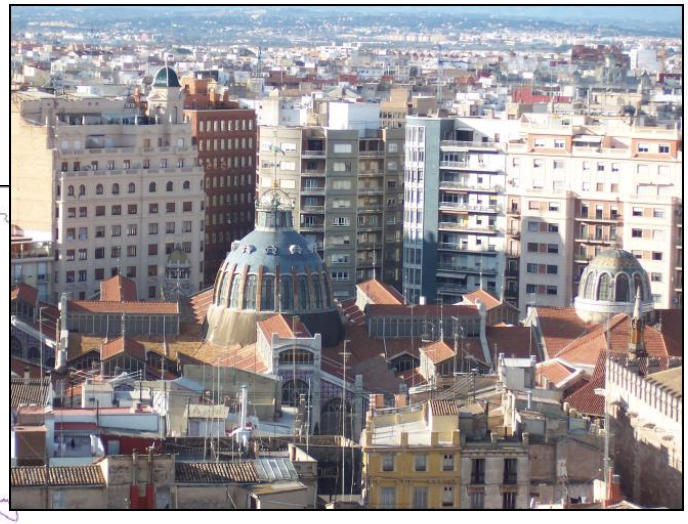
NVWA

NEVAL

- Located in Spain (Valencia)





Studies connected with EPPO

- NEVAL Services performs a wide range of efficacy studies for registration product development and demonstration **including trials against nematodes**.

EPPO Standards

- Nematode Extraction
- Diagnostic protocols
- Efficacy evaluation of nematicides

Efficacy evaluation of nematicides

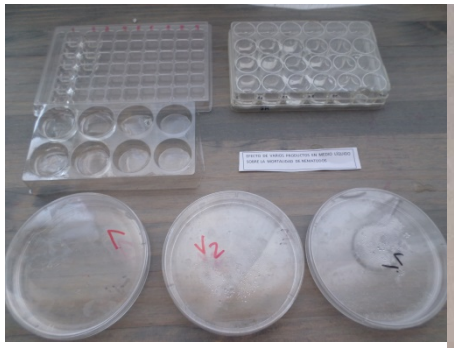
- The efficacy testing on Nematicides of plant protection products is working actually with 4 databases provided by EPPO.

  - PP1/188 (2) Aphelenchoides on ornamental
  - PP1/047 (2) Ditylenchus dipsaci
  - PP1/027 (3) Globodera and Heterodera
  - PP1/048 (2) Migratory roots
  - NO STANDARDS FOR MELOIDOGYNE SP.

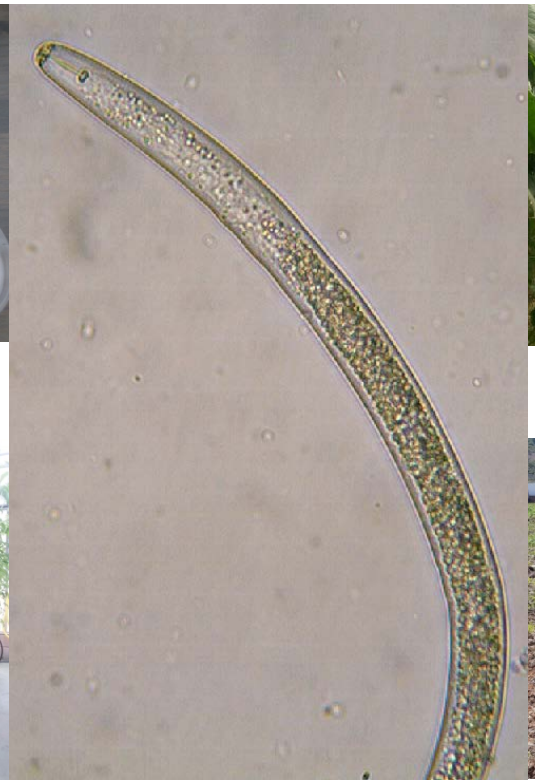
Importance of :

Maintenance of populations to stablish new trials

The most demanded nematodes in efficacy trials are **Root-Knot nematodes and mixed population.**



Liquid



Greenhouse

Glass house

Field trial

Meloidogyne and Migratory roots as a reference:

- All the studies about nematodes are valuable for **Nematicides producers** and we need to learn more about the correct manage of them.

- Need for a COLLECTION of nematodes where developers of the product have available the pest to test the action of the product in different ways.

Collection of nematodes in vivo

- We are maintaining nematodes in **hosts** and also in **soil samples refrigerated** for a short term use in liquid trials.

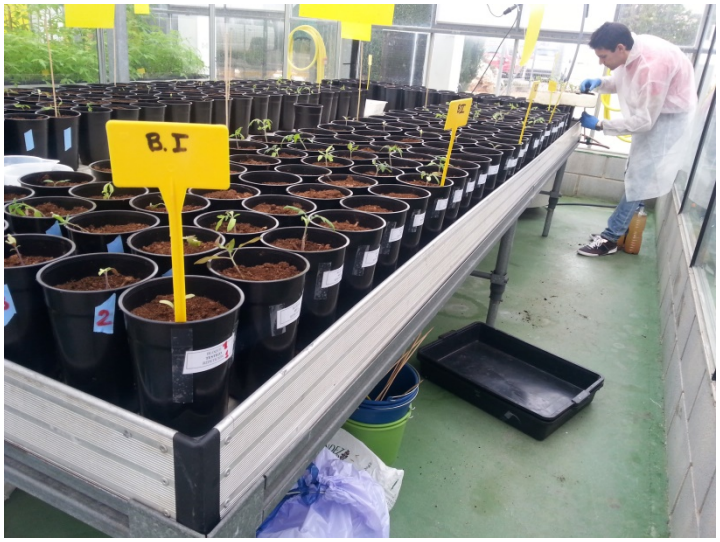
- One of the most important points in studies is the **homogeneity of the initial population** thus the strategy, this is the main reason to maintain nematodes population in vivo.

Nematodes Collection

1. Root-knot nematode:
   - Meloidogyne sp.
2. Root lesion nematode:
   - Pratylenchus sp.
3. Citrus Nematode:
   - Tylenchulus semipenetrans.
4. Mixed population

Collection objectives:

1. **Maintenance of populations to stablish new trials.**



2. **Study the reproduction of nematodes in different hosts.**

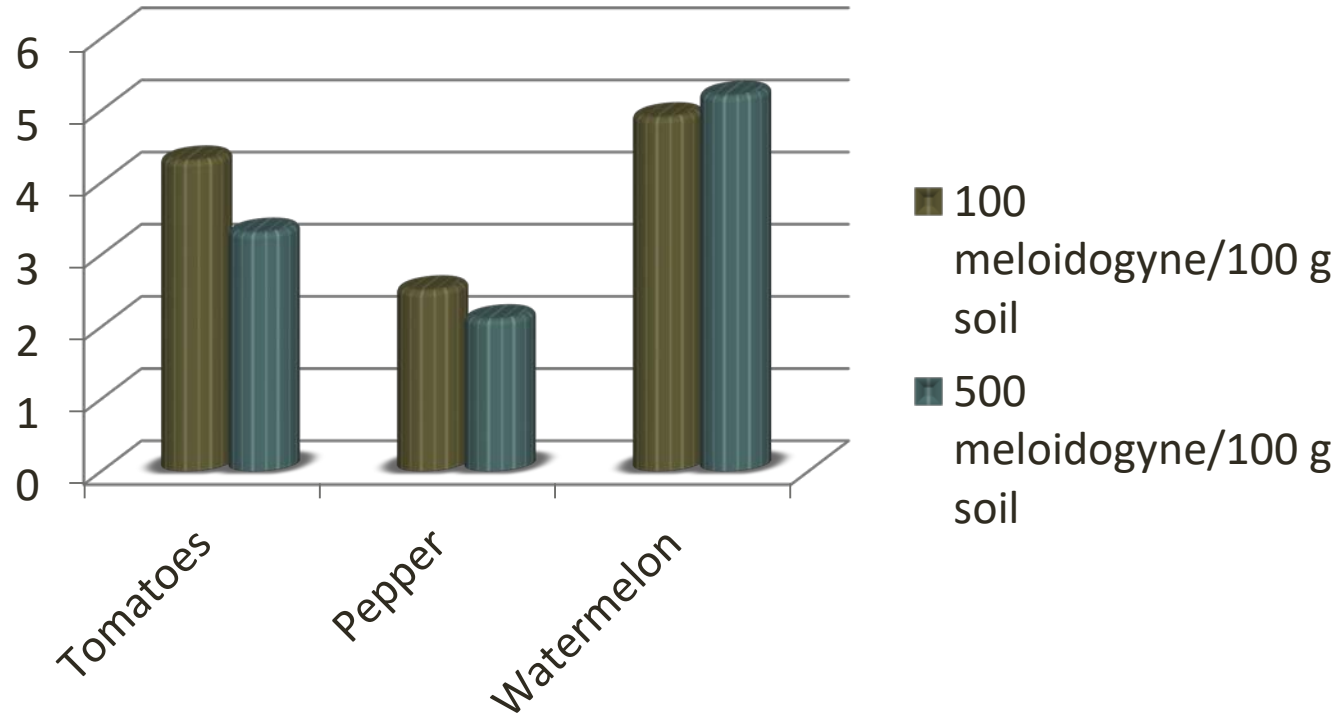
Multiplying Meloidogyne

- *Soil (sandy soil :* 87.5% sand, 5% silt, 5% clay, 2.5% organic matter *> substrate)*
- *Temperature (30ºC > 25ºC)*
- *Hosts (Tomatoe >Pepper>Spinach)*

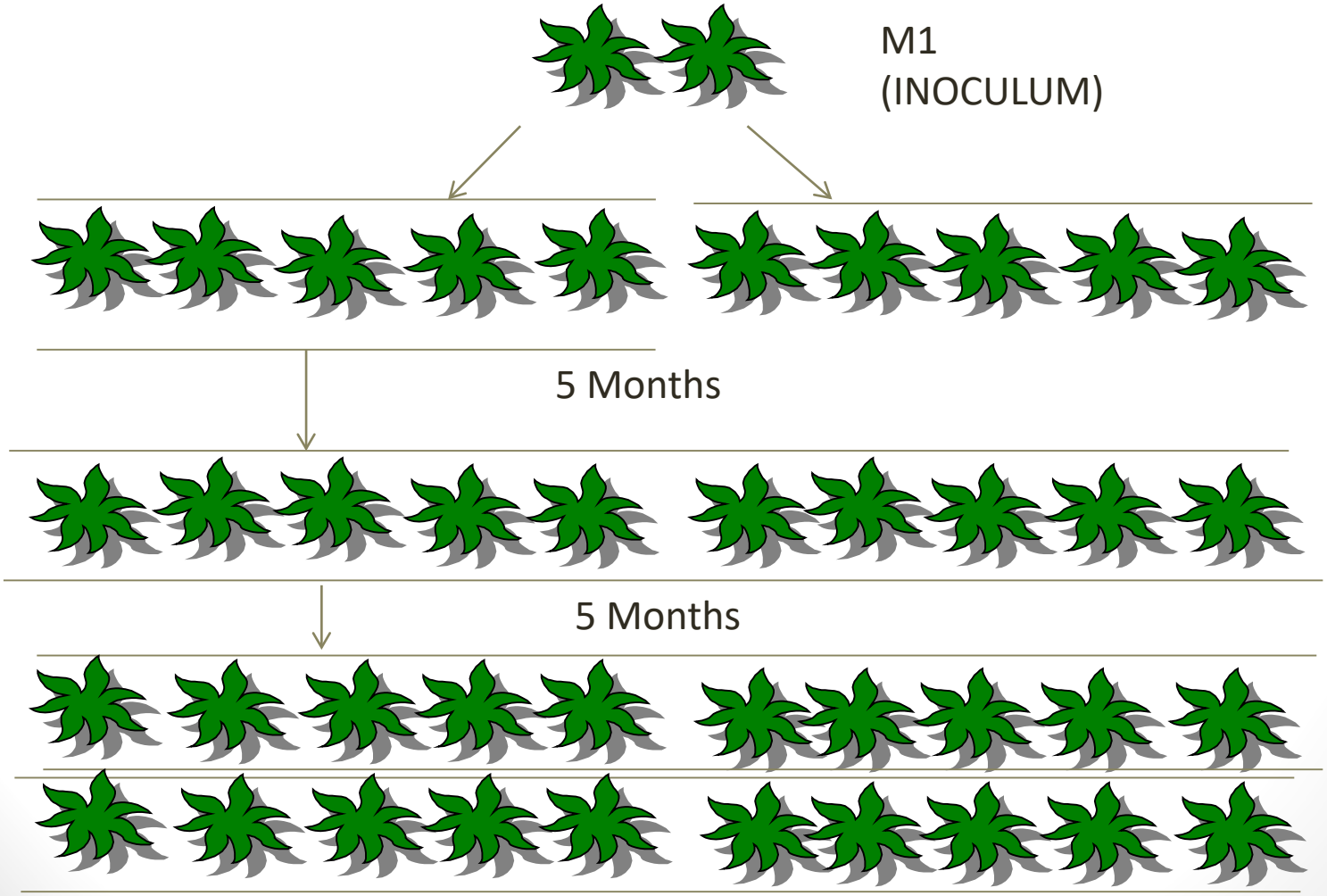
  **Testing watermelon*
- *Initial inoculum (100 meloidogyne/100 g s)*

- Reproduction factor in 5 months with in glasshouse conditions at the different densities at the begining of the study.

- *Watermelon (Under study) Corresponding to 3 repetitions last summer.*



Hosts maintenance



Pratylenchus sp.

- We are in the way of multiplying Pratylenchus in 3 different hosts to evaluate the reproduction factor with a low initial population in Carrot/Strawberry/Tomatoes

Inoculum is provided normally by farmer samples with mixed population.

- Isolate male and females (if possible)
- Morphological measures of males and females

Tylenchulus semipenetrans

- We are maintaining microplots with Orange trees with populations of:
  - 6000 nematodes/100 g soil.
  - 3000 nematodes/100 g soil.

- Normally Tylenchulus semipenetrans is not presenting interaction with others plant parasitic nematodes.

- Easy isolation.

Suggestions

- An **Specific guideline for Efficacy trials** with Root Knot nematodes.

- Guideline explaining some aspects for the **Management of in vivo collection** with some genus with information about:

    - **Reproduction factor** by host and experimental conditions.

    - **Threshold** by host and specific nematodes- (Symptoms at different levels of infestation).

THANKS

NEVAL
Grupo Farmalest
More than Labs