

A large, detailed microscopic image of a nematode, showing its long, thin, segmented body with internal structures visible. It is curved in an S-shape across the top half of the page.

Nematology

with Dr Paula Agudelo

Talking points

KNOWLEDGE

1. What is a nematode?
2. What is germplasm?

COMPREHENSION

3. Why is the study of Me a nationally and globally important priority?
4. Why are cover crops important for agriculture?

APPLICATION

5. “Our research team includes expertise in plant breeding, plant pathology, population genetics, nematology, horticulture, economics, and integrated pest management,” explains Paula. What do you think each of these disciplines offers the FINDMe project?
6. How do you think cover crops can improve soil health and manage pests such as Me?
7. Why is it important to rotate sources of resistance?

ANALYSIS

8. Why do you think Paula is keen for agriculture to develop alternative management solutions to pesticides such as nematicides? Consider nematode distribution and diversity in your answer.
9. “There is so much we still don’t know about nematodes,” says Paula. Why do you think nematodes have been arguably understudied?

EVALUATION

10. Me’s ecological niche is thought to be restricted to warmer environments. How do you think climate change might affect Me distribution, and how might Paula’s team incorporate such predictions into their research and advice to the agricultural sector?

Activity

The FINDMe project is focusing on creating solutions to the threat posed by Me in the US and beyond. A key part of this will be communicating the team’s findings and recommendations to agricultural stakeholders, such as farmers.

Using Paula’s article, the FINDMe website (www.findmenematode.org) and further web-based research, create a ‘how-to’ guide for farmers who grow crops that could be affected by Me. Your guide should include:

- An introduction to Me and why it is a growing issue.
- Measures to prevent the introduction of Me to the farm.
- How to test for and identify Me infection in plants.
- Methods to mitigate Me infection, such as:
 - Nematicides
 - Cover crops / crop rotations
 - Biological controls
 - Resistant crop variants
 - How the farm can contribute to research efforts.

Use straightforward language and consider the use of images and infographics to illustrate your points clearly. Once complete, compare your guide to a classmate’s, and think about how you might make further improvements to make it more informative and accessible.

More resources

- The FINDMe website introduces the project, its most recent updates, and provides a lot of background information to the challenge:
www.findmenematode.org
- This video from SciShow provides a compelling introduction to nematodes and why they are so valuable to our world: www.youtube.com/watch?v=vBWzrlCBhCM
- This page from AgCareers explores typical nematologist job descriptions and what you can expect from a career in nematology:
www.agcareers.com/career-profiles/nematologist.cfm