GHENT UNIVERSITY

Course Specifications

Valid in the academic year 2024-2025

Diversity of Plant-Parasitic Nematodes (C003949)

Course size *(nominal values; actual values may depend on programme)*

Credits 6.0 **Study time 180 h**

Course offerings and teaching methods in academic year 2024-2025

A (semester 2)	English	Gent	lecture
			practical

Lecturers in academic year 2024-2025

Bert, Wim	WE11	lecturer-in-charge
Apolonio Silva de Oliveira, Daniel	WE11	co-lecturer

Offered in the following programmes in 2024-2025	**crdts**	**offering**
International Master of Science in Agro- and Environmental Nematology	6	A

Teaching languages

English

Keywords

Plant-parasitic nematodes, diagnosis, species identification, virus vector families, morphology, taxonomy, phylogeny, ecology

Position of the course

The course provides detailed information on morphology, taxonomy and phylogeny of the plant-parasitic nematodes, i.e. the Tylenchomorpha and the two nematode virus vector families Longidoridae and Trichodoridae. It focuses on economically important species and provides additional basic information to other courses on agro ecosystems. The main objectives are acquiring the ability and skills to identify these taxa on genus level and on species level for the most important plant-parasitic nematodes

Contents

Theory: General morphology, classification, taxonomy and phylogeny of the Tylenchomorpha, Longidoridae and Trichodoridae.
Practicals:

- Microscopic study and identification of the Tylenchomorpha, Longidoridae and Trichodoridae, with emphasis on the economically important taxa
- Demonstration of representatives of the most important plant-parasitic nematode genera
- Discussions of identification problems.

Initial competences

It is necessary to have followed the courses on "General Morphology" and "Nematode Systematics and evolution"

Final competences

1 To recognize anatomic structures of plant-parasitic nematodes and understand the functions these structures.
2 Identify plant-parasitic nematodes to genus level using microscopic methods.
3 Differentiate taxonomical informative from non-informative characters.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture, Practical

Extra information on the teaching methods

Formal lectures and guided lab sessions (microscopy)

Study material

Type: Handouts

Name: Diversity PPN printed PPT slides in colour
Indicative price: € 22
Optional: no
Language : English
Number of Pages : 152
Available on Ufora : Yes
Online Available : Yes
Usability and Lifetime within the Course Unit : intensive
Usability and Lifetime within the Study Programme : regularly
Usability and Lifetime after the Study Programme : occasionally

References

- **Manzanilla-López, R.H. & Marbán-Mendoza 2013. Practical Plant Nematology. Montecillo, Mexico, Bibliotheca Basica de Agricultura**
- DECRAEMER, W. & CHAVES, E., 2012. Longidoridae and Trichodoridae. In Manzanilla-Lopez, R. & Marban Mendoza, N. (Eds). Practical Plant Nematology. N.. Fundacion Colegio de Posgraduados and Mundi Prensa, Mexico, chap. 15, pp. 579-617.
- DECRAEMER, w. & E. GERAERT, 2013. Ectoparasites. In: Perry, R. & Moens, M. (editors) Plant Nematology, CABI publishing, Wallingford, UK, 2nd edition, chap. 6, pp. 150-180
- DECRAEMER, W. & HUNT, D. (2013). Structure and classification. In Perry, R.N. & Moens, M. (Eds). Plant Nematology. Wallingford, UK, CABI Publishing, pp. 3-39.
- DECRAEMER, W. 1995. The family Trichodoridae: Stubby Root and Virus vector nematodes, Developments. In Plant Pathology, 6, 360pp. Kluwer Academic Publishers, Dordrecht, Boston, London. 360 pp
- GERAERT, E. 2006. Functional and detailed Morphology of the Tylenchida (Nematoda). Nematology Monographs and Perspectives, 4, Brill Leiden, The Netherlands, 224 pp.
- KARSSEN, G. 2002. The Plant-parasitic Nematode Genus Meloidogyne Göldi, 1892. Brill Leiden, The Netherlands, 157 pp.
- SIDDIQI, M.R. 2000. Tylenchida: Parasites of Plants and Insects, 2nd edition. CABI Publishing, U.K., 848 pp.
- TAYLOR, C.E. & BROWN, D.J.F. 1997. Nematode Vectors of Plant Viruses. 277pp

Course content-related study coaching

Group and individual assistance during the practical exercises and interactive support via Ufora by Wim Bert and Daniel Apolonio (lectures).

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Written assessment with multiple-choice questions, Written assessment with open-ended questions

Examination methods in case of periodic assessment during the second examination period

Written assessment with multiple-choice questions, Written assessment with open-ended questions, Written assessment

Examination methods in case of permanent assessment

Skills test

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

PE (50%): written (multiple choice with standard-setting; blanks exercises; open questions; identifications based on pictures and/or virtual microscopy)
NPE (50%) Practical examination= identification of plant-parasitic nematodes.

Calculation of the examination mark

Period bound evaluation 50 % and non-period bound evaluation 50%.
The final result is based on a combination of theoretical knowledge (multiple choice questions, blanks exercises and open questions) AND identification skills.