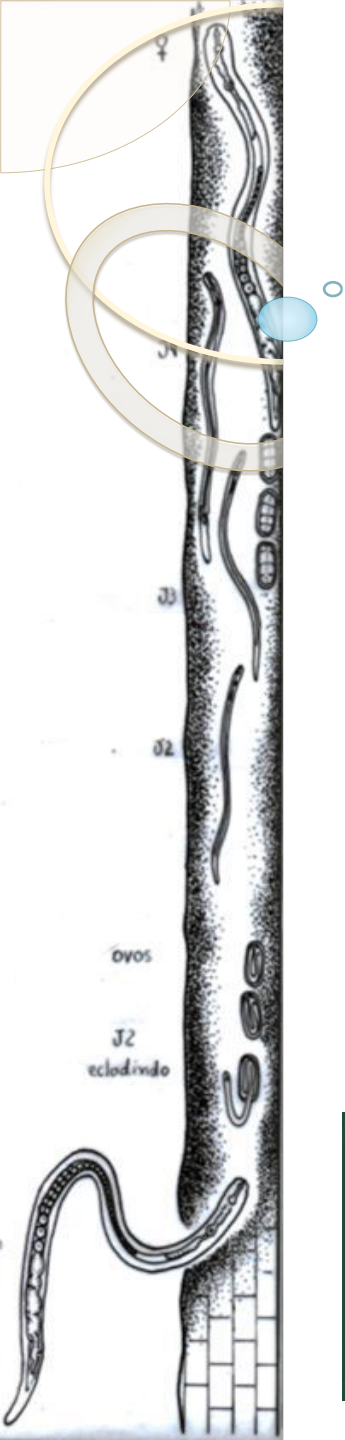


LFT-5870 Agentes Causais de Doenças de Plantas

Fitonematoídes (2)



Universidade de São Paulo
Escola Superior de Agricultura Luiz de Queiroz
Departamento de Fitopatologia e Nematologia
Piracicaba 22 Junho 23

Roteiro Geral

15 jun 23 *Meloidogyne*

Meloidogyne spp. em cafeeiros

Meloidogyne javanica e *M. incognita* em cana

M. javanica e *M. incognita* em batata

M. enterolobii em goiabeira e pimentão

29 jun 23 *Pratylenchus*, *Radopholus* e *Helicotylenchus*

Pratylenchus brachyurus em soja e quiabeiro

P. zae em cana e milho

Radopholus similis em bananeira e gengibre

Helicotylenchus dihystera em soja

22 jun 23 *Heterodera*, *Tylenchulus* e *Rotylenchulus*

Heterodera glycines em soja

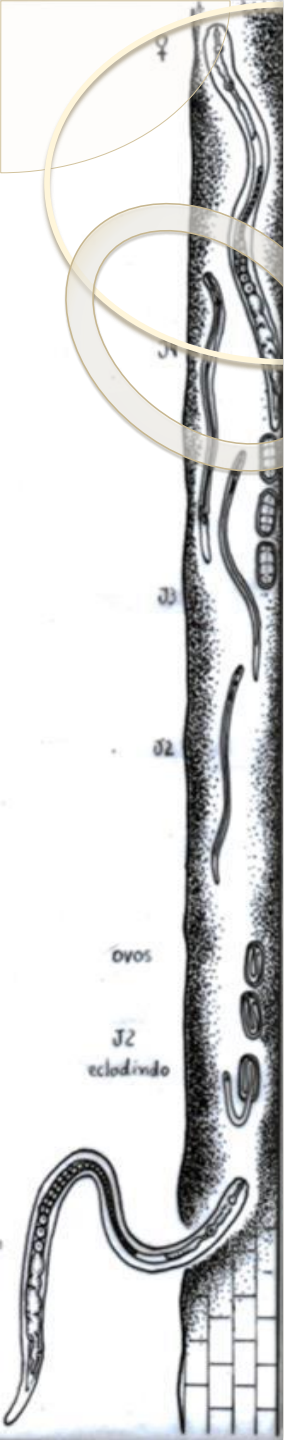
Tylenchulus semipenetrans em cítricos e videira

Rotylenchulus reniformis em algodão e meloeiro

6 julho 21 *Ditylenchus* e *Aphelenchoides*

Ditylenchus dipsaci em alho e cebola

Aphelenchoides besseyi em arroz, soja e algodoeiro



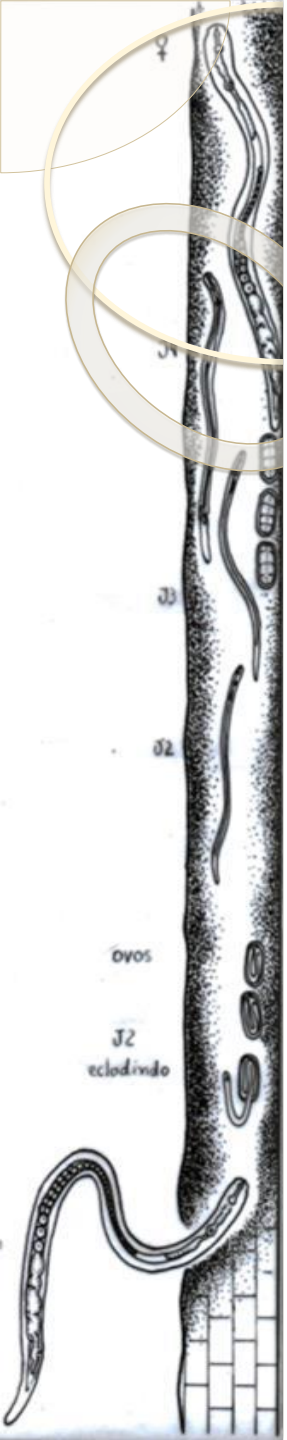
HOJE

22 jun 23 *Heterodera*, *Tylenchulus* e *Rotylenchulus*

Heterodera glycines em soja

Tylenchulus semipenetrans em cítricos e videira

Rotylenchulus reniformis em algodão e meloeiro



Gênero *Heterodera*

Família Heteroderidae

Todas as espécies são sedentárias
Fêmeas são globosas e retêm parte dos ovos do seu corpo
Fêmeas originam cistos na maioria dos gêneros



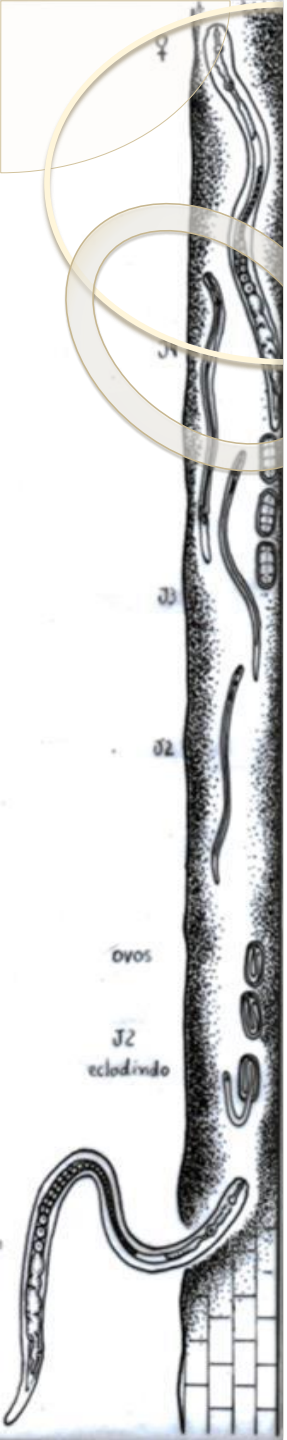
Meloidodera astonei

<http://nemaplex.ucdavis.edu/Taxadata/G073s2.aspx>



Globodera rostochiensis

https://www.researchgate.net/publication/284182087_The_resistance_of_different_potato_cultivars_on_yellow_cyst_nematode_Globodera_rostochiensis_pathotype_Ro1



Globodera

Espécie	Hospedeiras	Distribuição
<i>G. rostochiensis</i>	Batata, tomate e <i>Solanum</i> spp. (90 spp.)	Mundial
<i>G. pallida</i>	Batata, tomate e <i>Solanum</i> spp.	Mundial



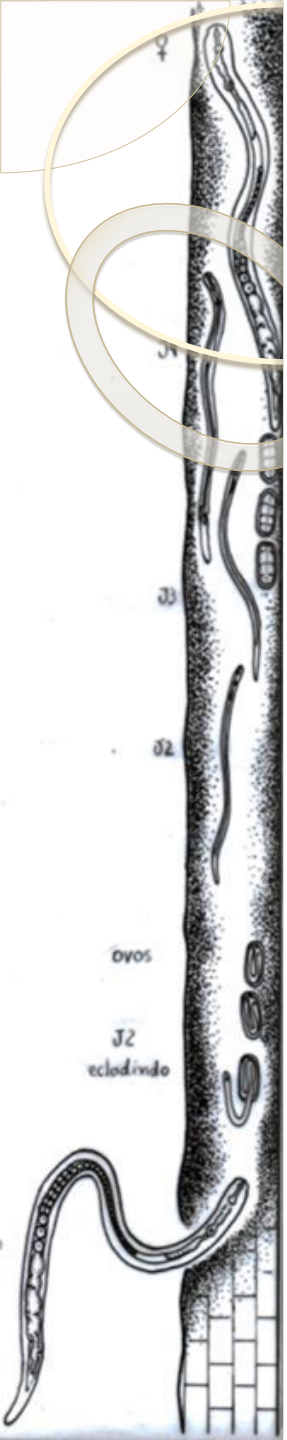
G. pallida

<https://www.ipmimages.org/browse/detail.cfm?imgnum=2131077>



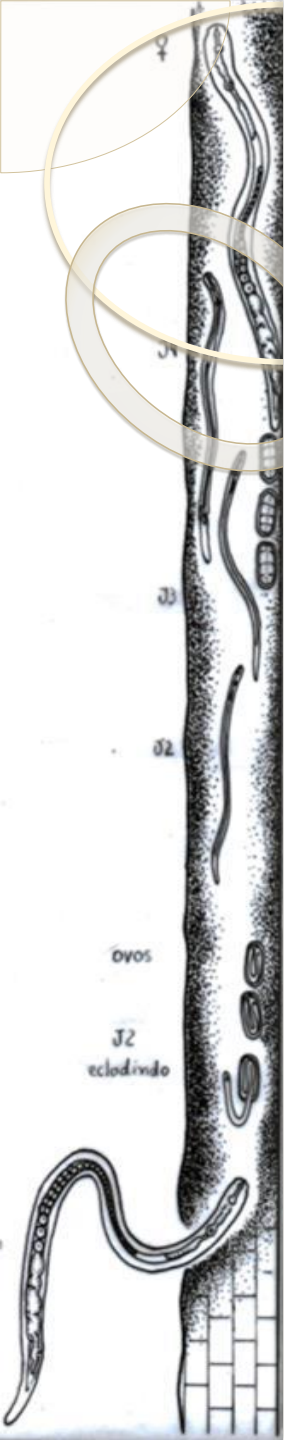
Idem

<https://www.cabi.org/isc/datasheet/27033>



Heterodera

Espécie	Hospedeiras	Distribuição
<i>H. glycines</i>	Soja, feijão, invasoras (Fabaceae), <i>Antirrhinum majus</i> (Scrophulariaceae), <i>Lamium amplexicaule</i> e <i>L. purpureum</i> (Lamiaceae)	Japão, China, Coreia do Sul, Coreia do Norte, Indonésia, Rússia, Egito, EUA, Brasil, Argentina, Chile, Equador, Colômbia
<i>H. avenae</i>	Aveia, trigo, centeio, cevada, milho e poáceas invasoras	Canadá, EUA, Austrália, Japão, Índia e vários países europeus
<i>H. trifolii</i>	<i>Trifolium</i> spp., <i>Melilotus</i> spp., <i>Lotus oroboides</i> , <i>Vicia vilosa</i> , <i>Medicago pironae</i> etc	Canadá, EUA, Austrália, Nova Zelândia, Índia, Israel e vários países europeus
<i>H. schachtii</i>	Beterraba e outras quenopodiáceas, repolho, couve-flor e outras brassicáceas.	Canadá, EUA, Turquia, Israel, Rússia, África do Sul e vários países da europeus
<i>H. fici</i>	Figueiras (inclusive <i>Ficus carica</i> e <i>F. elastica</i>)	EUA, China e Brasil
<i>H. zea</i>	Milho, cevada, teosinto, aveia, arroz, trigo, sorgo, cana-de-açúcar, etc	EUA, Índia, Paquistão e Egito



Cactodera

Espécie	Hospedeiras	Distribuição
<i>C. cacti</i>	Várias cactáceas	Canadá, EUA, Cuba, Argélia, vários países asiáticos e europeus, Brasil

GRÁRIAS



Você está em: Início > Notícias > Pesquisa do Dep. de Fitotecnia, registra, em caráter pioneiro, um novo nematoide afetando cactáceas

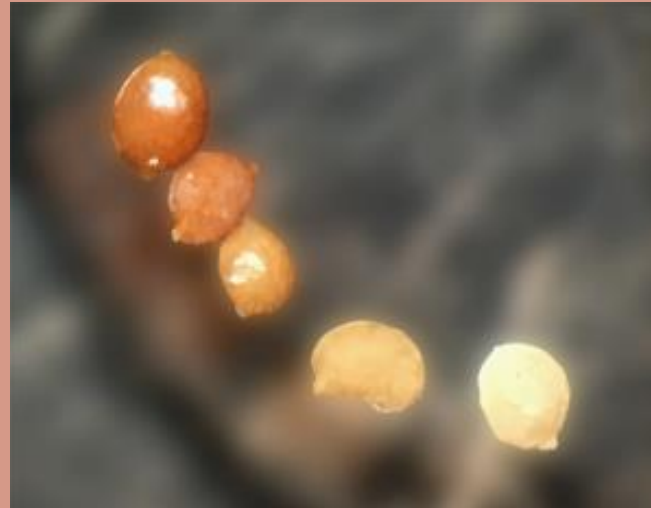
Pesquisa do Dep. de Fitotecnia, registra, em caráter pioneiro, um novo nematoide afetando cactáceas

16 de agosto de 2017

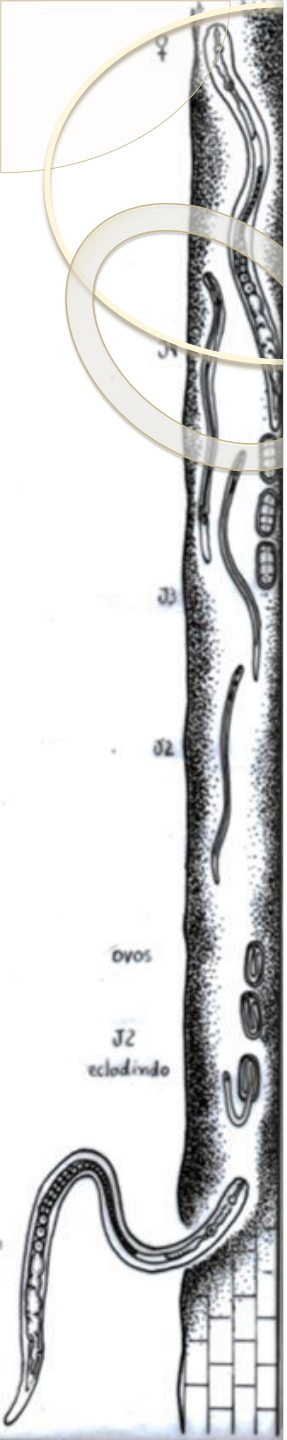


"O primeiro relato de um novo nematoide de plantas para o Ceará foi registrado na monografia do estudante de Agronomia Rhannaldy Benício Rebouças, defendida em 2017.1. Trata-se do heteroderídeo *Cactodera cacti*, um nematoide parasita de raízes que afeta, preferencialmente, cactáceas como mandacaru, palma, pitaia e cactáceas ornamentais.

O patógeno forma cistos, estruturas que garantem sua sobrevivência em uma área por vários anos, que podem ser disseminados pelo solo ou por meio de mudas, a curta e a longa distâncias. Este foi o primeiro registro de sua ocorrência natural em mandacaru no Brasil. Sua identificação e relato foram acompanhados pelo Ministério de Agricultura, Pecuária e Abastecimento (MAPA). Em outros países, esse fitonematoide tem larga importância, pois pode produzir prejuízos econômicos consideráveis, principalmente para cactáceas ornamentais, forrageiras e frutíferas. No Ceará, essa ameaça está sendo investigada pelo Setor de Fitossanidade do Deptº de Fitotecnia do CCA/UFC."



https://www.infoescola.com/wp-content/uploads/2013/06/mandacaru_792046204.jpg



SOC. BRASIL NEMAT.
Public. n.º 2, 1977

**OCORRÊNCIA NO ESTADO DE SÃO PAULO DO
NEMATÓIDE *HETERODERA FICI* KIRJANOVA,
1954, NOCIVO À FIGUEIRA**

Ailton Rocha Monteiro¹
Luiz Gonzaga E. Lordello¹
Rubens R. A. Lordello²

**Effects of *Heterodera fici* on the Growth of
Commercial Fig Seedlings in Pots**

M. DI VITO AND R. N. INSERRA¹
Journal of Nematology 14(3):416-418, 1982.

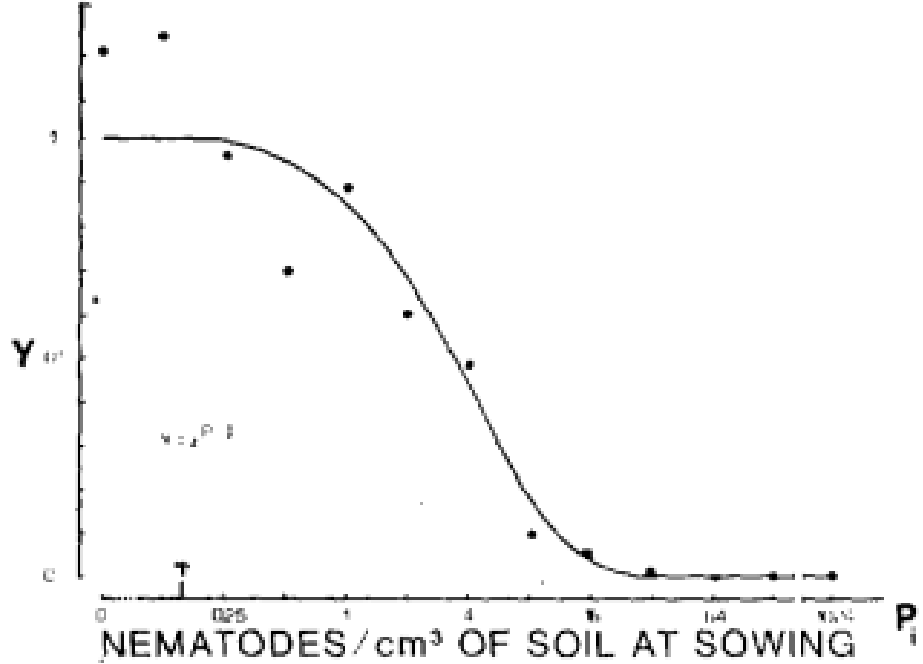
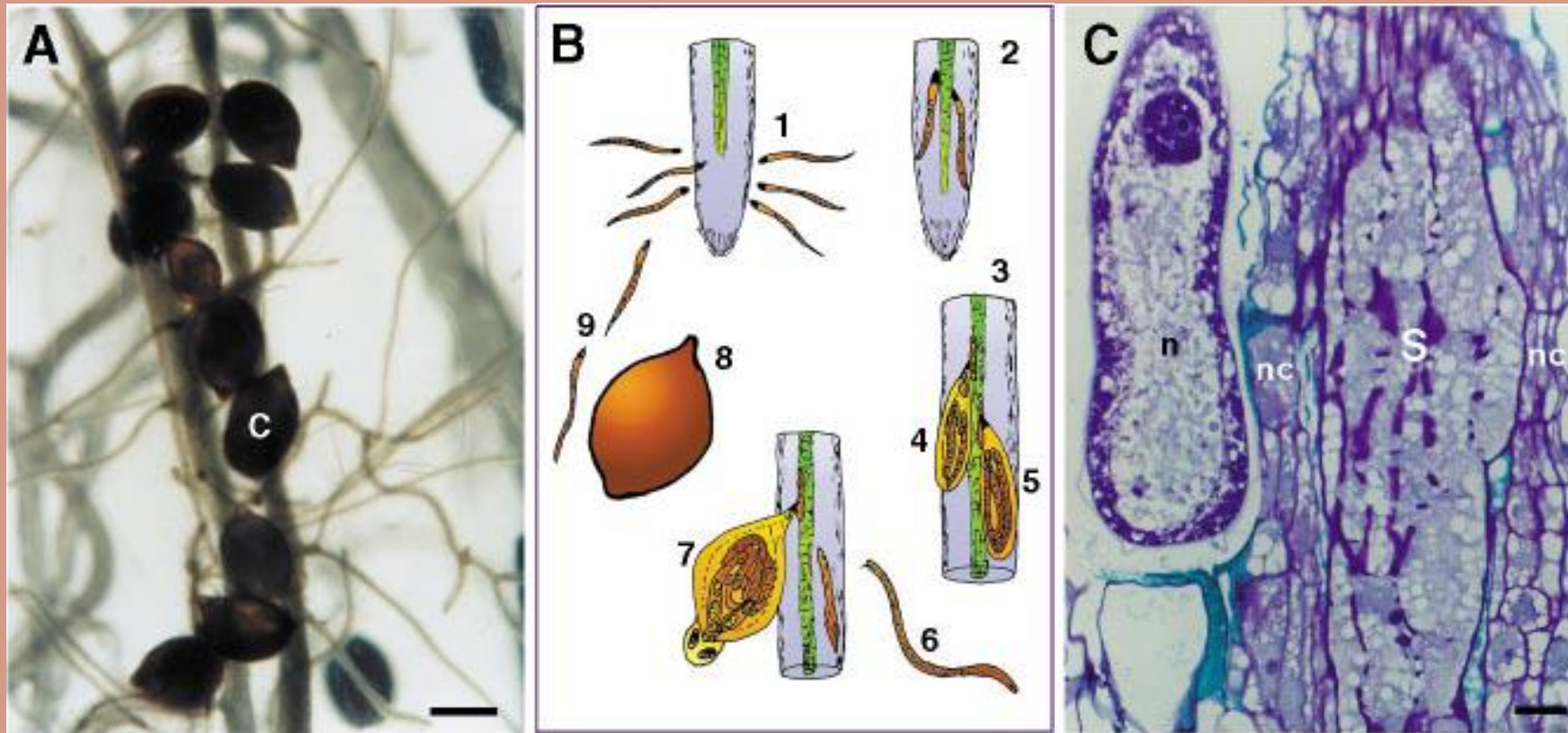


Fig. 1. Relation between initial population density (P_1) of *Heterodera fici* and fresh weight of the tops of commercial fig plants (y).

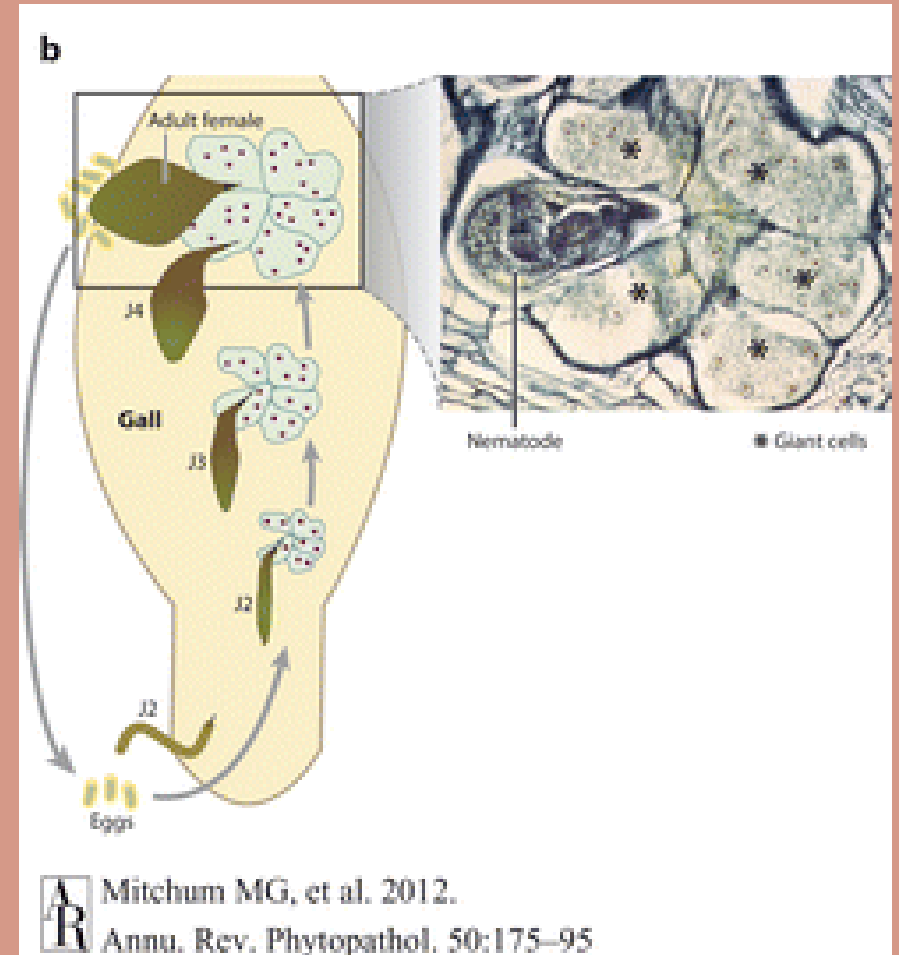
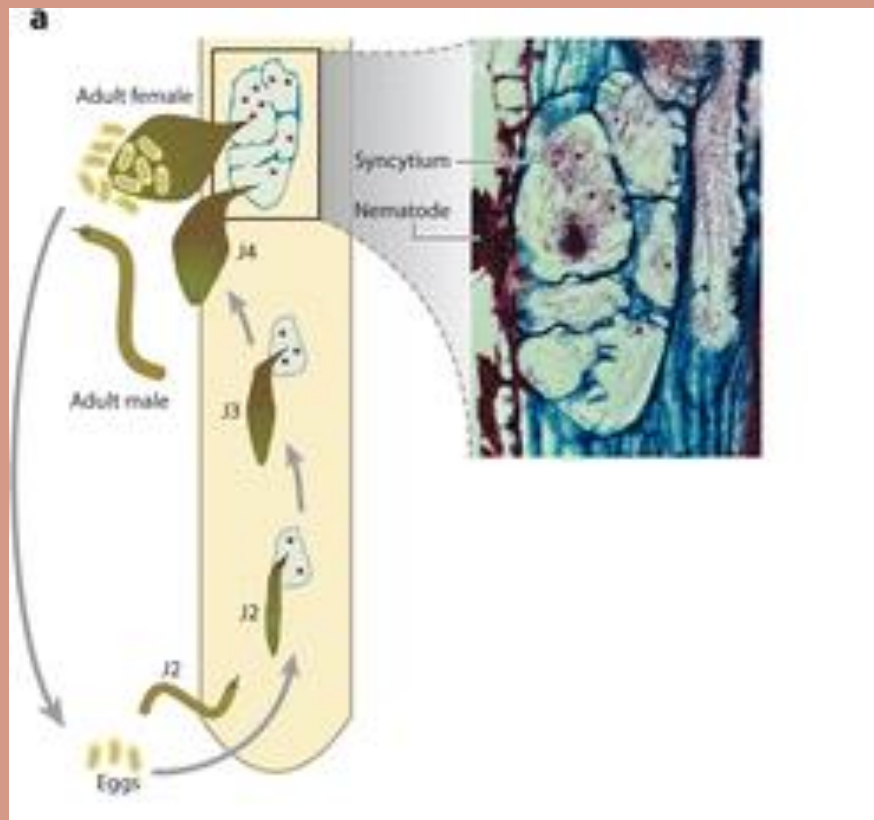
Nematoides-de-Cisto Ciclo



- 1 Infecção - juvenil 2º. estágio J₂
- 2/3 Colonização – J₂ obeso
- 4 J₄ fêmea / 5 J₄ macho
- 6 Adulto macho
- 7 Adulto fêmea e massa de ovos
- 8 Cisto
- 9 J₂ solo

cCisto nNematoide SSincício

Células Nutridoras



Mitchum MG, et al. 2012.
Annu. Rev. Phytopathol. 50:175–95



Parte ovos permanecem e maturam dentro da ♀ (fatores endógenos e exógenos)

Cutícula ♀ altera quimicamente, cor castanha, eventualmente camada subcristalina → **cisto**

Cisto liberado das raízes com degeneração dos tecidos infectados

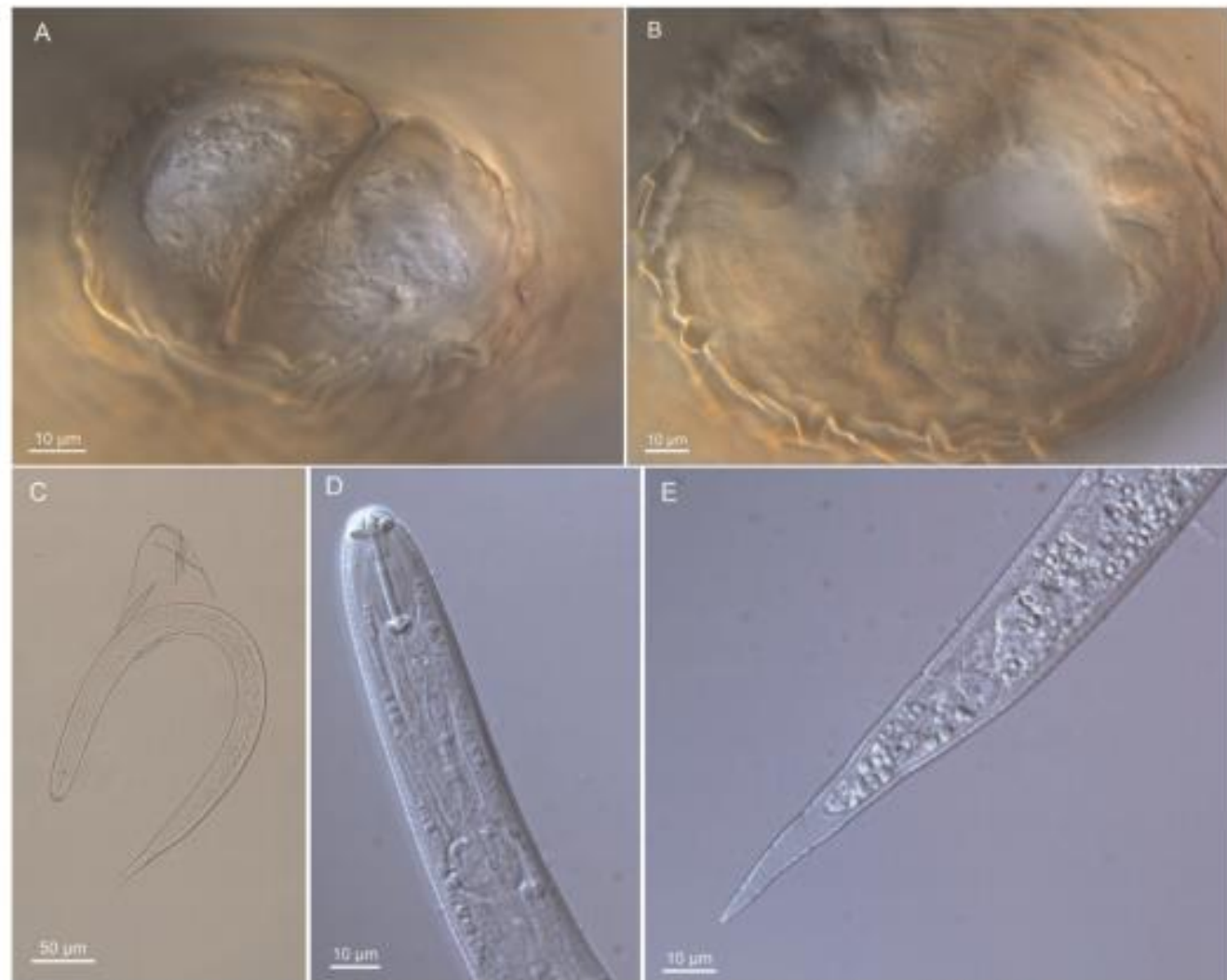


FIG. 1. Photomicrographs of *Heterodera fici* on fig tree from Ontario, Canada. A, B. Cyst vulval cones with the ambifenestrated fenestra in A) and well-developed underbridge and bullae in B). C-E. The second-stage juveniles from a crushed cyst with the whole body in C), the anterior region in D) and the posterior region in E).

Papel do Cisto?



Sobrevivência

Dispersão

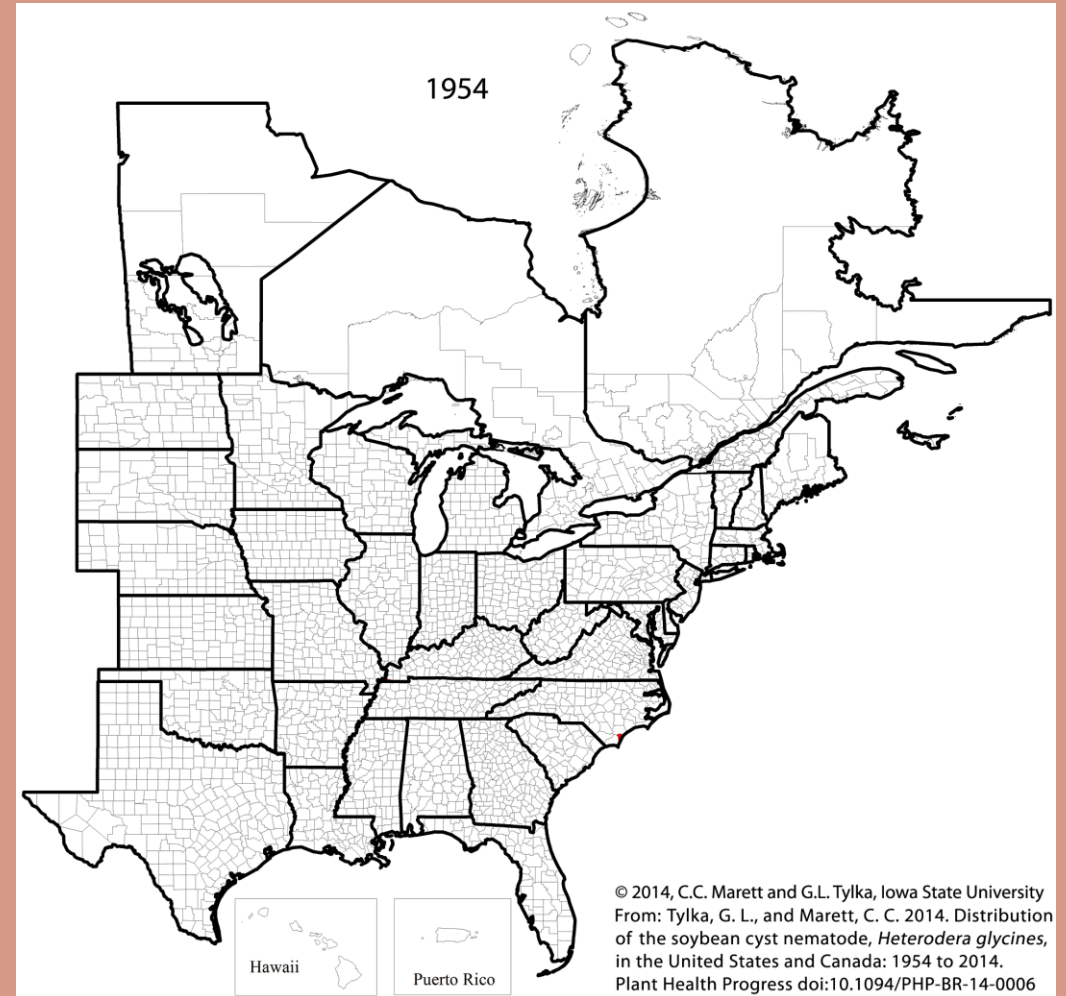
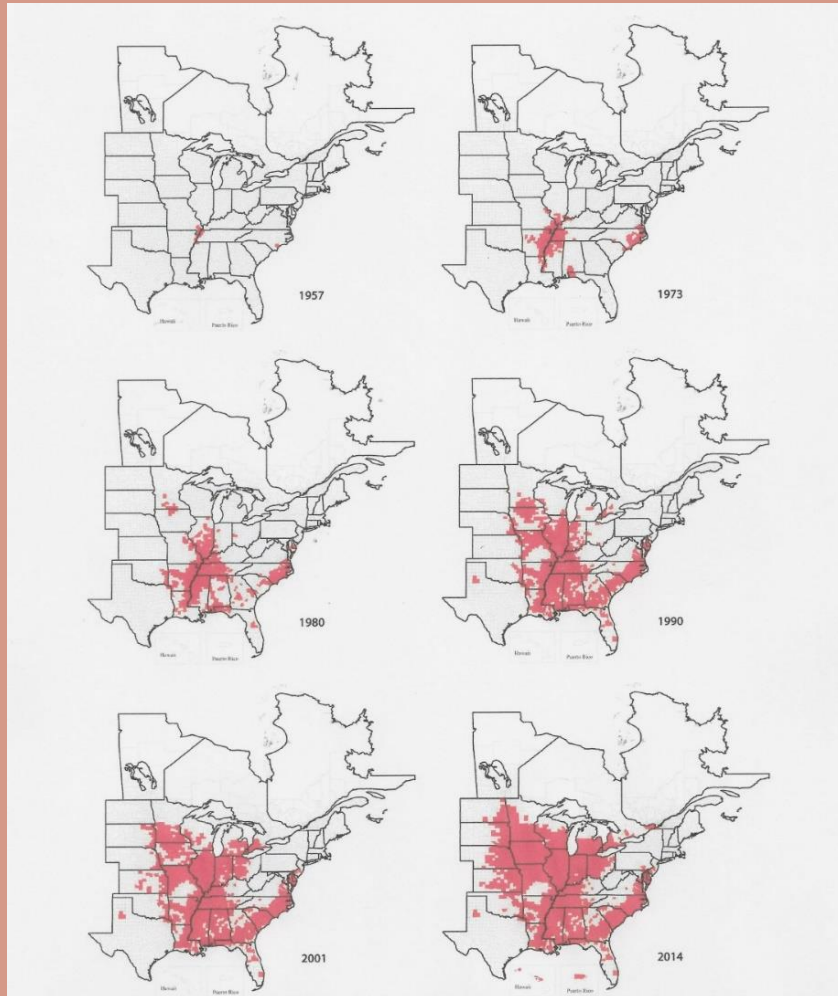


G. pallida

https://www.mindenpictures.com/search/preview/pale-or-yellow-potato-cyst-nematode-heterodera-pallida-cysts-on-a-young/0_80106371.html

http://ppp.illinois.edu/newppp_2001/tools/Slides4/slidehtms/scn11.htm

Distribuição de *H. glycines* EUA e Canadá



2010 MT 18,78 milhões t soja
Perda 47,5 mil t nas estradas

H. glycines Cisto em torrões de solo



24 Dez 2013 / Rodovia PR-180 / Nova
Aurora-Goioerê

<https://www.folhadelondrina.com.br/economia/rocagem-de-soja-em-beira-de-estrada-e-alvo-de-reclamacao-866697.html>

***Heterodera glycines* em Soja**



Foto Rodrigo Gonçalves Trevisan (2015)



Foto João Victor Zinsly (2018)





Fotos Hércules Diniz Campos

Perdas Causadas por Fitonematoides no Brasil (2019)

Soja	16 bilhões	<i>Heterodera glycines</i> <i>Pratylenchus brachyurus</i> <i>Meloidogyne javanica</i> <i>M. incognita</i> <i>Aphelenchoides besseyi</i> <i>Rotylenchulus reniformis</i> <i>Helicotylenchus dihystera</i> <i>Scutellonema</i> <i>brachyurus</i> <i>Tubixaba tuxaua</i>
Café	4,6 bilhões	<i>Meloidogyne paranaensis</i> <i>M. incognita</i> <i>M. exigua</i> <i>M. coffeicola</i> <i>Pratylenchus jaehni</i> <i>P. brachyurus</i>
Algodão	1,3 bilhão	<i>M. incognita</i> <i>R. reniformis</i> <i>P. brachyurus</i>
Batata	0,26 bilhão	<i>M. javanica</i> <i>M. incognita</i> <i>P. brachyurus</i>
Cenoura	0,12 bilhão	<i>M. javanica</i> <i>M. incognita</i>

Effects of Diseases on Soybean Yields in the United States 1996 to 2007

Allen Wrather, University of Missouri-Delta Center, P.O. Box 160, Portageville, MO 63873; and **Steve Koening**, Department of Plant Pathology, North Carolina State University, Raleigh, NC 27695

Patógenos / Doenças	Perdas (mil t)			
	1996	2002	2004	2007
<i>Heterodera glycines</i>	5.820	3.889	3.721	2.558
<i>Meloidogyne</i> spp. e outros	161	136	140	170
<i>Phytophthora sojae</i>	1.102	1.251	1.554	683
Tombamentos	597	594	1.200	923
<i>Macrophomina phaseolina</i>	336	863	295	820
<i>Sclerotinia sclerotiorum</i>	614	79	1.633	139
<i>Cercospora sojina</i>	23	191	310	257
Síndrome Morte Súbita	0,1	781	1.152	601
Vírus	65	818	61	184
Total	10.894	10.494	13.206	8.079



Suppression of Soybean Yield Potential in the Continental United States by Plant Diseases from 2006 to 2009

Stephen R. Koening, North Carolina State University, P.O. Box 7616, Raleigh, NC 27695; and **J. Allen Wrather**, University of Missouri-Delta Research Center, P.O. Box 160, Portageville, MO 63873

Table 1. Estimated yield losses in bushels of soybeans due to diseases in 28 U.S. states* during 2006, 2007, 2008, and 2009.

Diseases	2006	2007	2008	2009
Anthraxnose	18,113,000	10,008,000	11,086,000	17,866,000
Bacterial diseases	3,731,000	6,159,000	6,319,000	4,348,000
Root-knot & other nematodes	7,919,000	6,250,000	9,677,000	6,959,000
Soybean rust	901,000	550,000	220,000	2,890,000
Sclerotinia stem rot	13,305,000	5,114,000	11,608,000	59,275,000
Seedling diseases	39,885,000	33,905,000	54,811,000	55,492,000
Southern blight	190,000	100,000	230,000	200,000
Soybean cyst nematode	123,778,000	93,981,000	171,997,000	120,048,000
Stem canker	7,779,000	5,055,000	5,661,000	5,562,000
Sudden death syndrome	27,320,000	22,078,000	20,412,000	34,473,000
Virus	7,451,000	6,676,000	5,957,000	4,577,000
Total	410,593,000	296,845,000	458,478,000	484,451,000

* States represented include AL, AR, DE, FL, GA, IA, IL, IN, KS, KY, LA, MD, MI, MN, MO, NC, ND, NE, OH, OK, PA, SC, SD, TN, TX, VA, and WI.

1 bushel soja = 27,2155 kg

20jun23 R\$137,00/saca 60kg

Perdas pelo NCS nos EUA 2009 R\$7,5 bilhões

2019

R\$ 16 bilhões

Heterodera glycines | *Pratylenchus brachyurus*
Meloidogyne javanica | *M. incognita* | *Aphelenchoides besseyi* | *Rotylenchulus reniformis* | *Helicotylenchus dihystera* | *Scutellonema brachyurus* | *Tubixaba tuxaua*

2021

Valor total soja
R\$ 366 bilhões

8 a 10%
(R\$ 30 a 37 bilhões)

Perguntas?

Intervalo

Tylenchulus

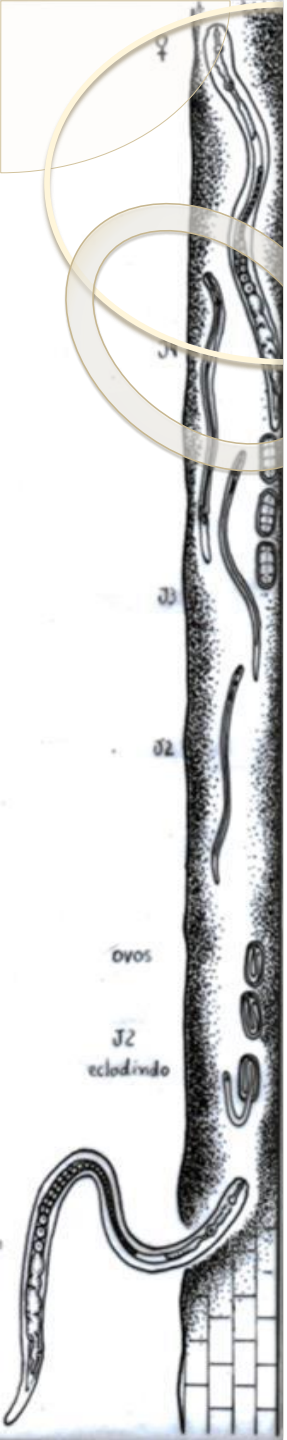
Tylenchulus semipenetrans é a única espécie importante do gênero

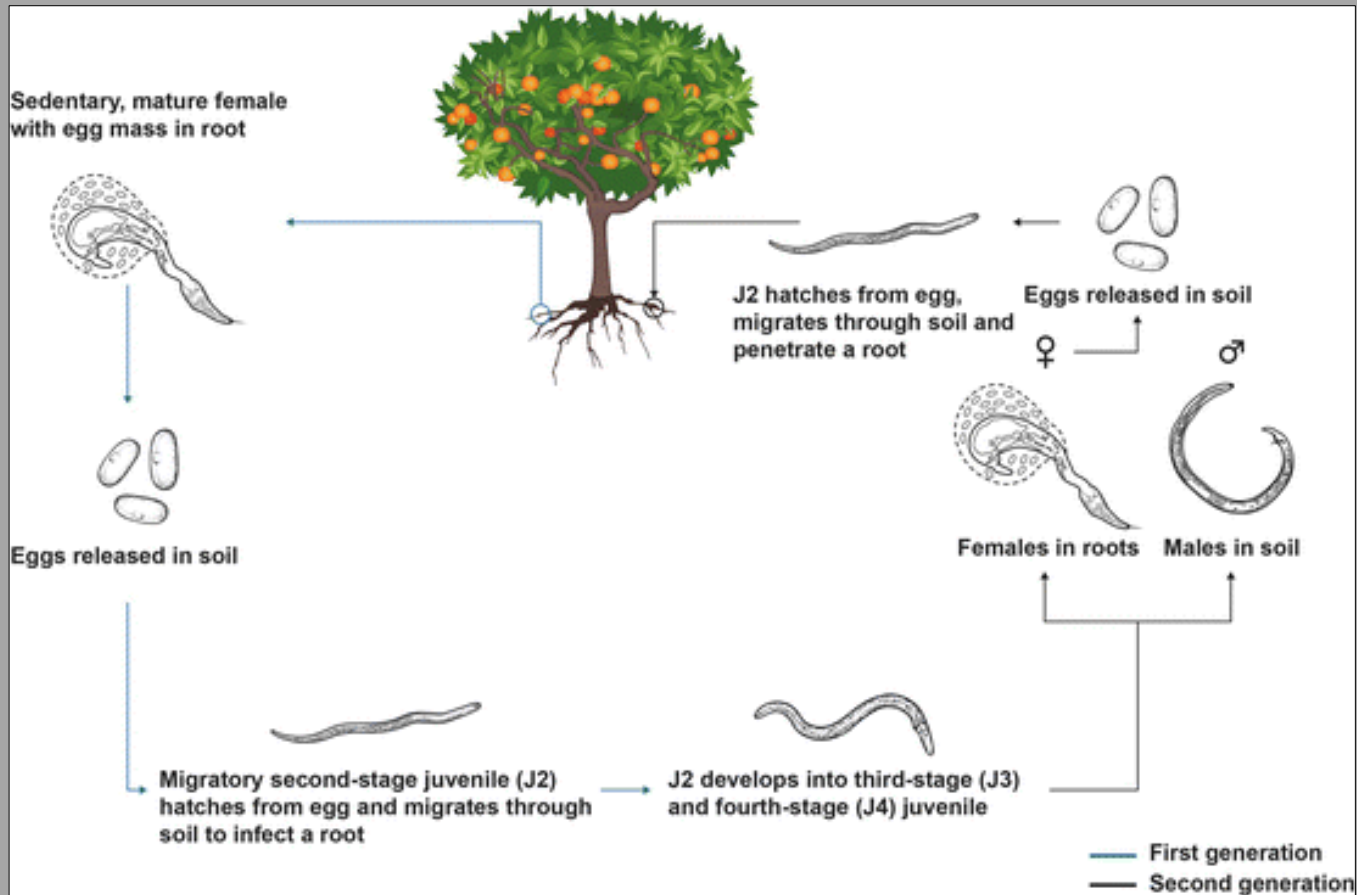
Cítricos são as principais plantas hospedeiras.

Outras hospedeiras são o caquizeiro, a videira e a oliveira.

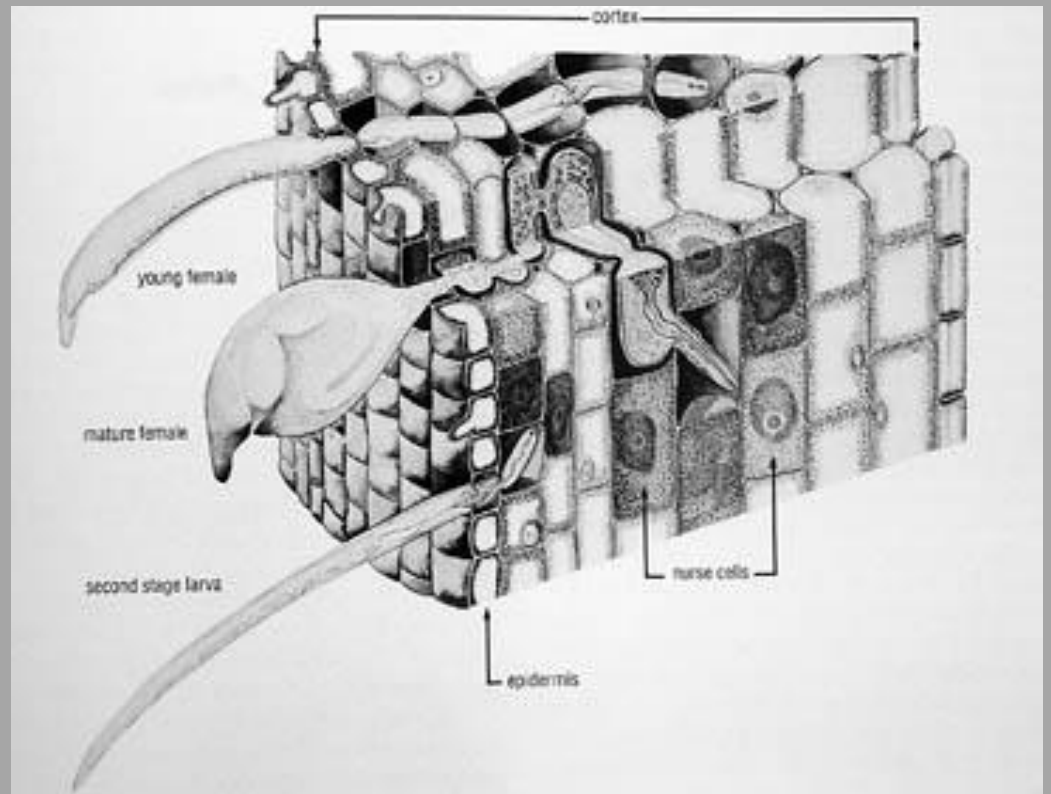


<https://granjasantos.com.br/produtos>

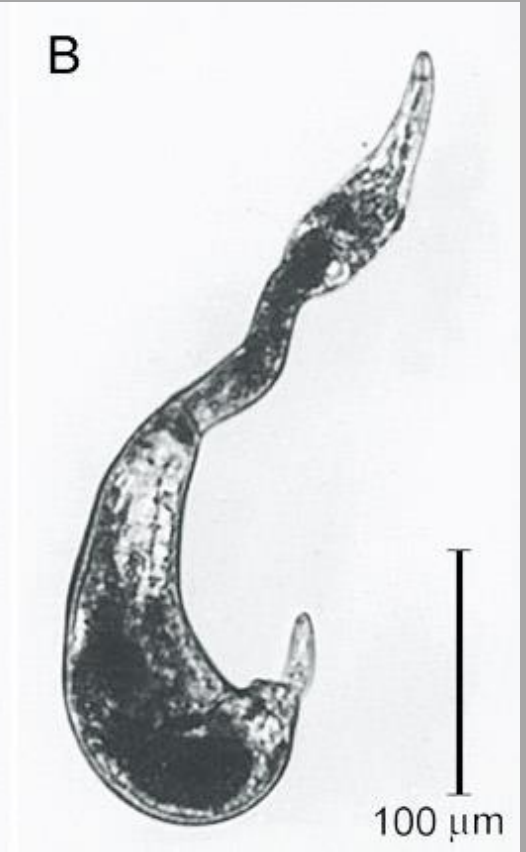
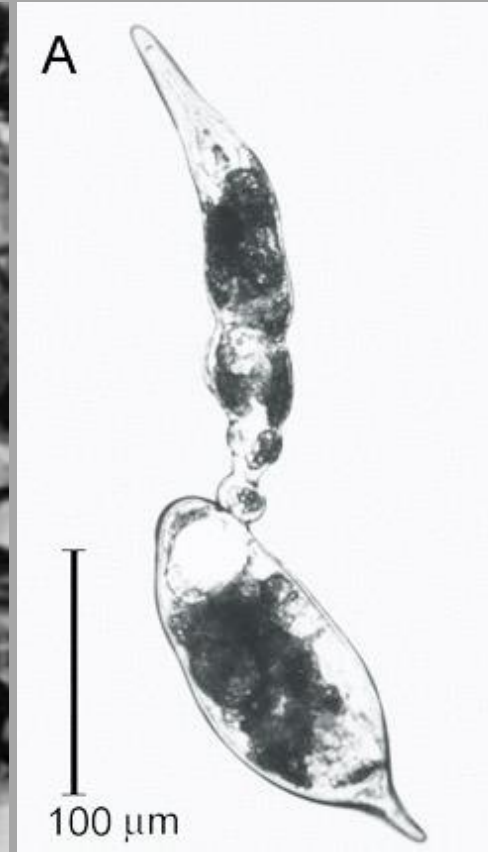
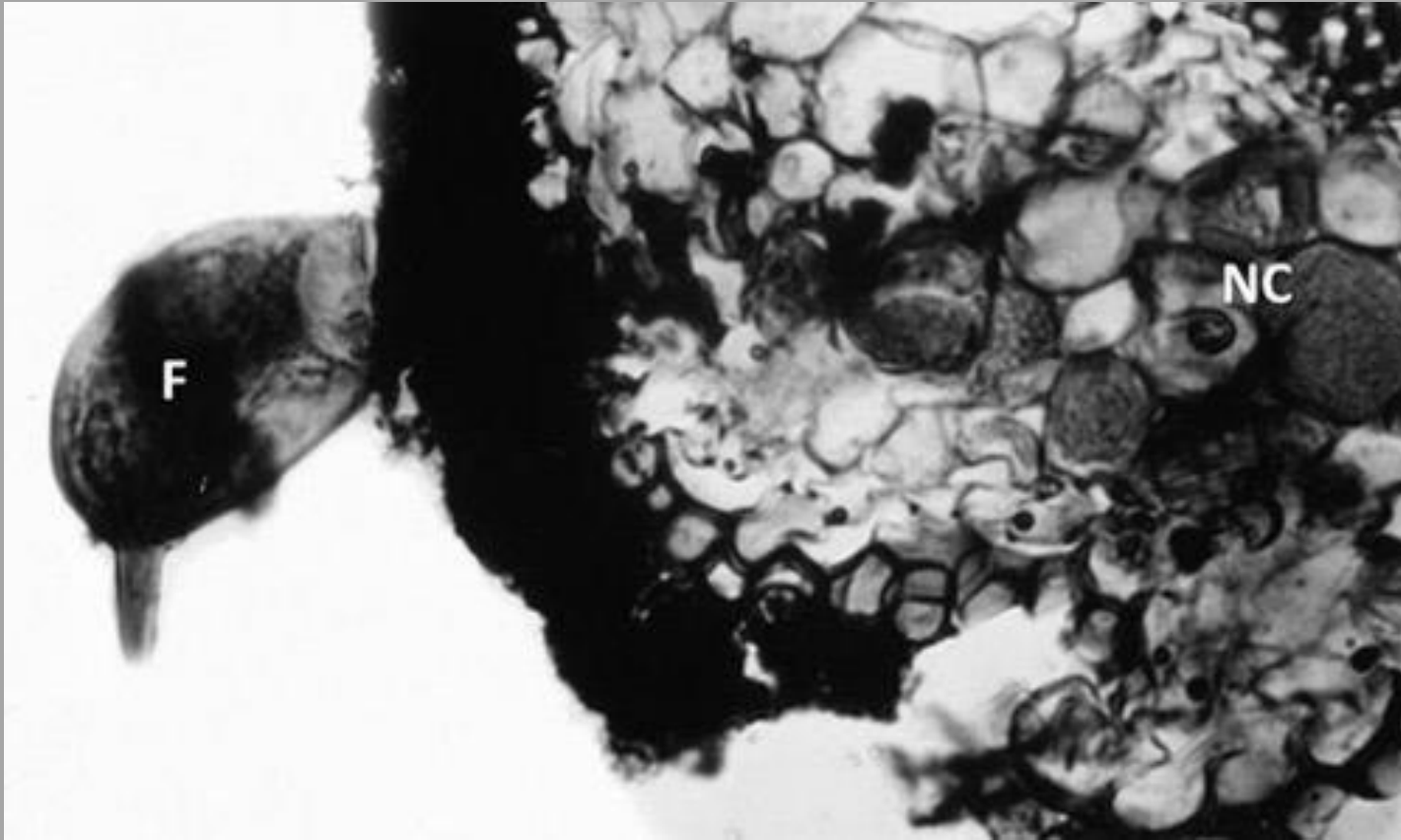




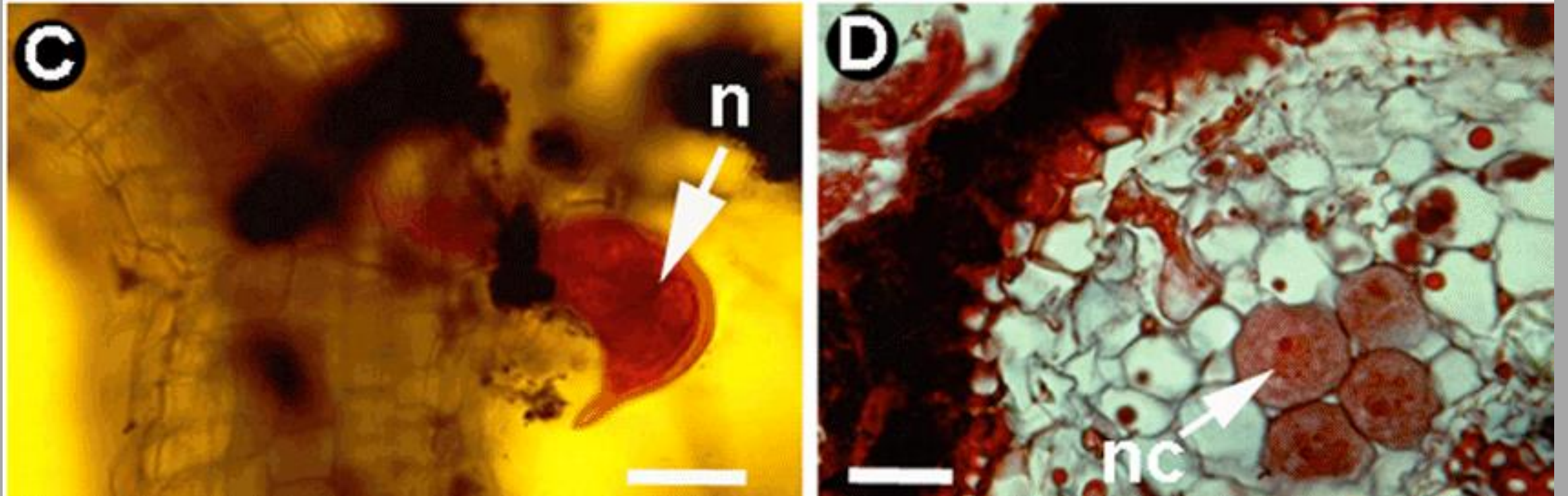
<https://link.springer.com/book/10.1007/978-3-319-44210-5>



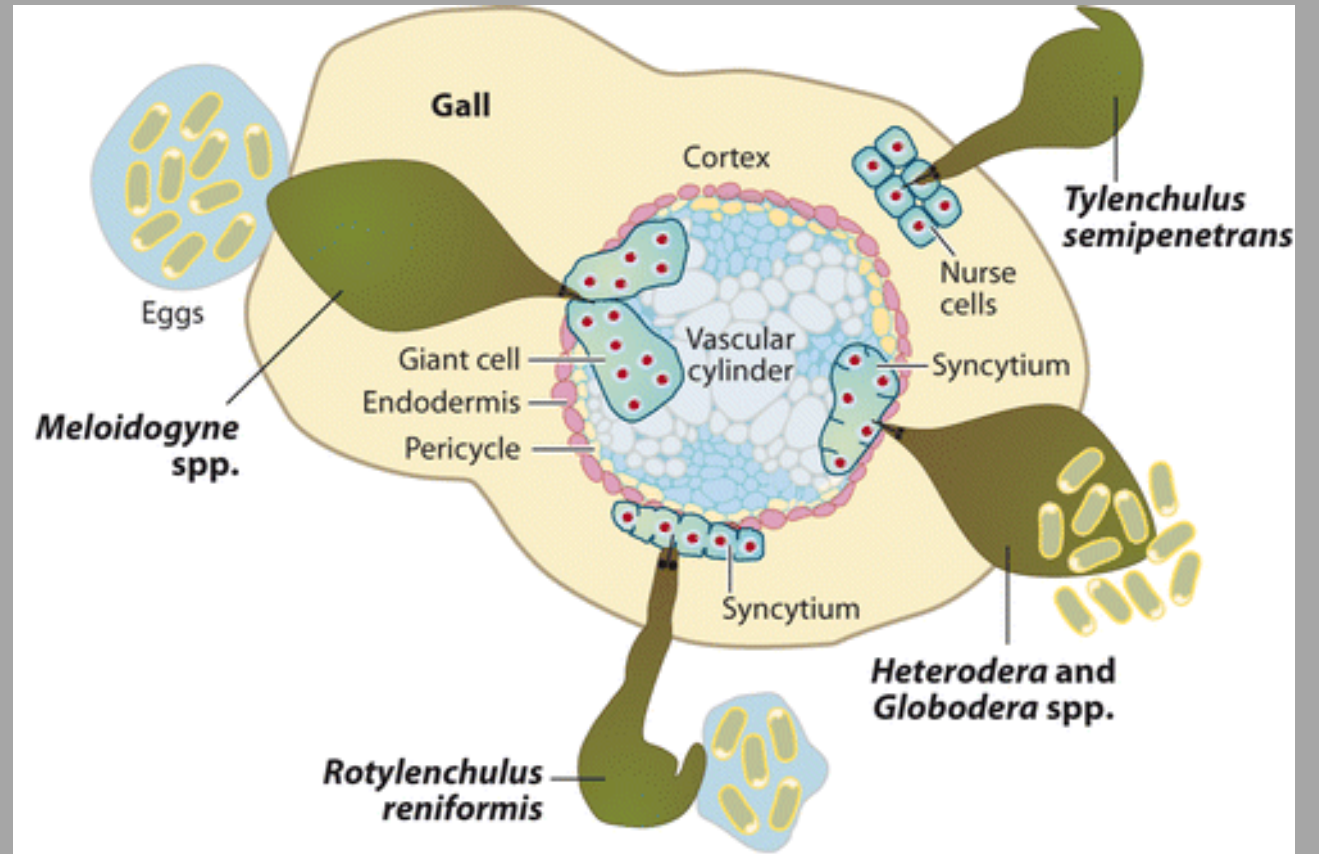
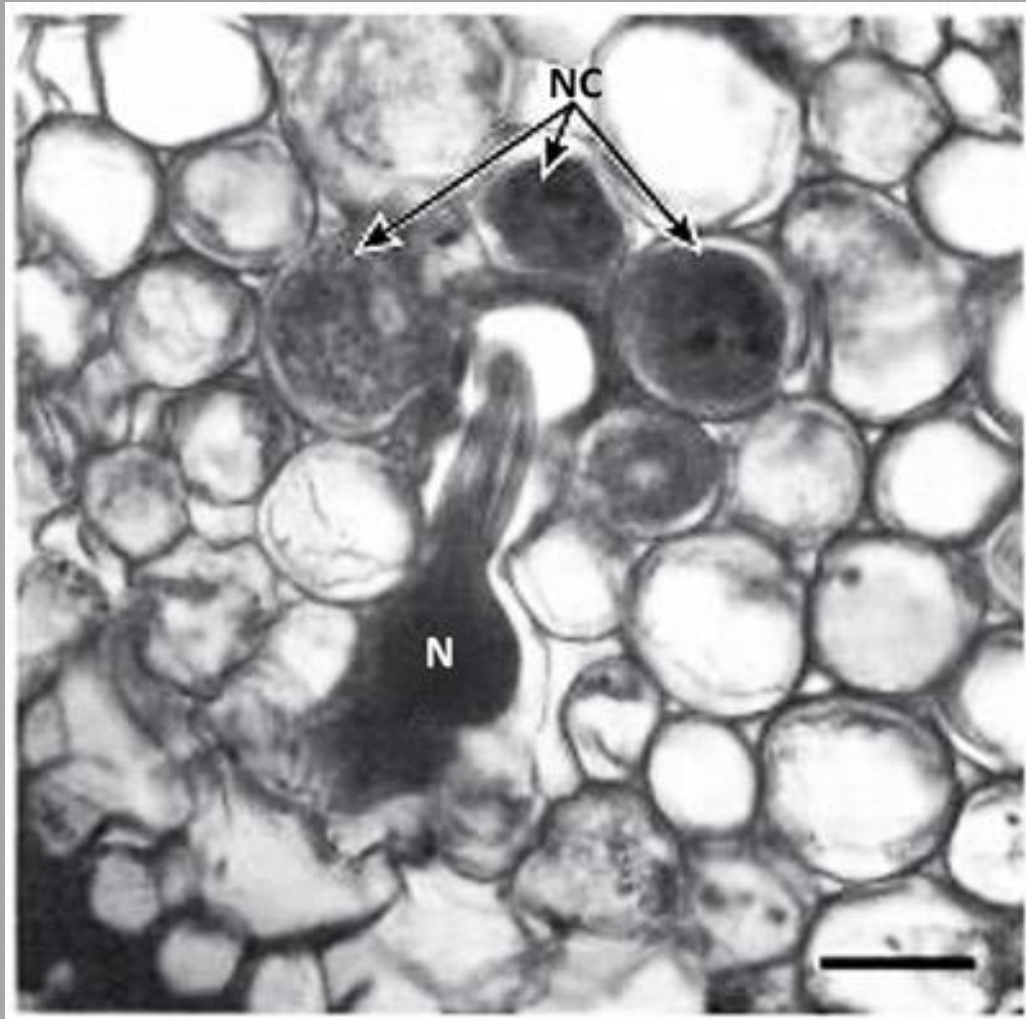
https://www.wikiwand.com/en/Tylenchulus_semipenetrans



https://entnemdept.ufl.edu/creatures/nematode/citrus_nematode.htm



Palomares-Rius et al. 2017. Anatomical alterations in plant tissues induced by plant-parasitic nematodes. *Frontiers of Plant Science* 8.



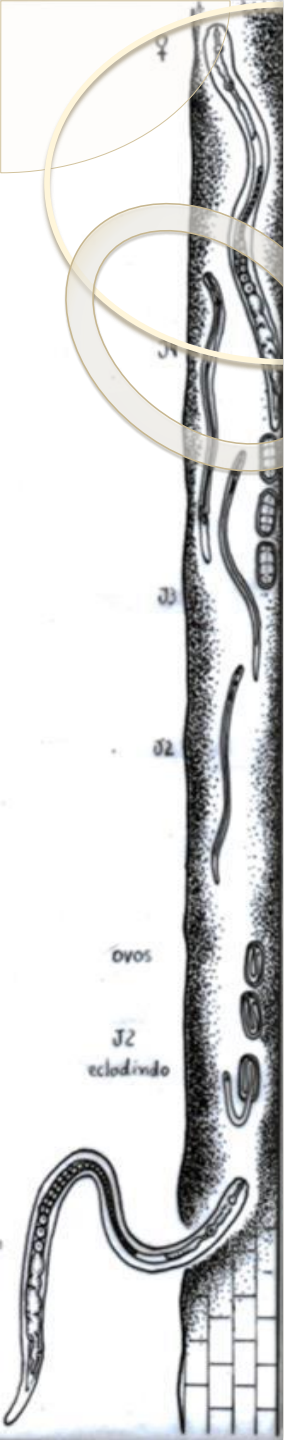
AR Mitchum MG, et al. 2012.
 Annu. Rev. Phytopathol. 50:175–95

https://entnemdept.ufl.edu/creatures/nematode/citrus_nematode.htm

Biótipos e Hospedeiras de *Tylenchulus semipenetrans*

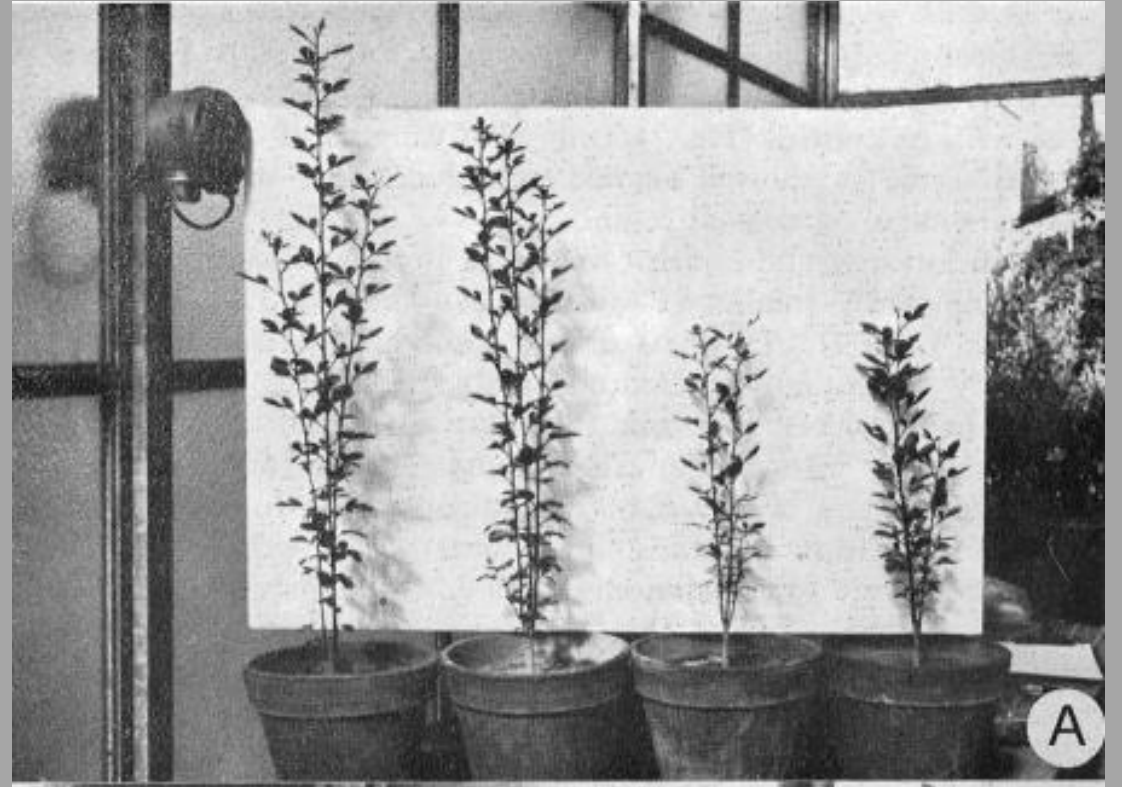
Biótipos	<i>Citrus</i> spp.	Videira	Caquizeiro	Oliveira	<i>Poncirus trifoliata</i>	<i>Citrumelo 'Swingle'</i>
Citros	+	+	+	+	-	-
Mediterrânea	+	+	?	-	-	-
Poncirus	+	+	?	-	+	+

Brasil Biótipo Citros





<https://www.cabidigitallibrary.org/doi/10.1079/cabicompendium.61059>



Inserra et al. (1979) Response of 'Troyer' citrange seedlings infested with *Tylenchulus semipenetrans* Cobb in three different soils. *Nematologia Mediterranea* 7.



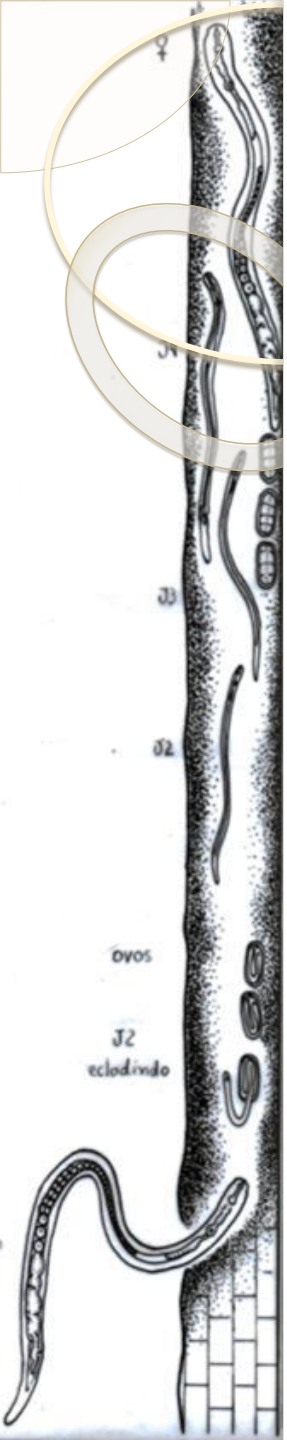
<https://www.redagricola.com/pe/un-problema-de-larga-data-en-los-huertos-de-todo-el-mundo/>



<https://www.facebook.com/fitosanidad/>
Fitofotosanidad en México – 9 out 2015 - Efecto de *Tylenchulus semipenetrans* en cítricos



<https://alchetron.com/Tylenchulus-semipenetrans>



Agricultural Research Institute, Ministry of Agriculture and Natural Resources
Nicosia, Cyprus

**YIELD LOSS ASSESSMENT CAUSED BY THE CITRUS NEMATODE
TYLENCHULUS SEMIPENETRANS ON VALENCIA ORANGES IN CYPRUS.**

by
I. PHILLIS

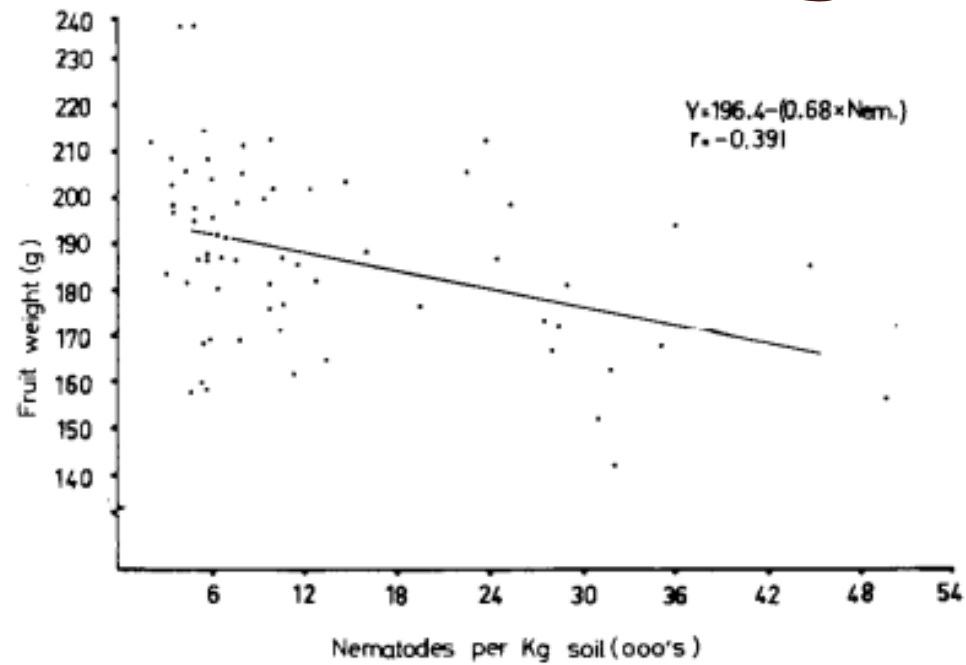


Fig. 1 - Relationship of citrus nematode populations to Valencia orange fruit weights in Cyprus.

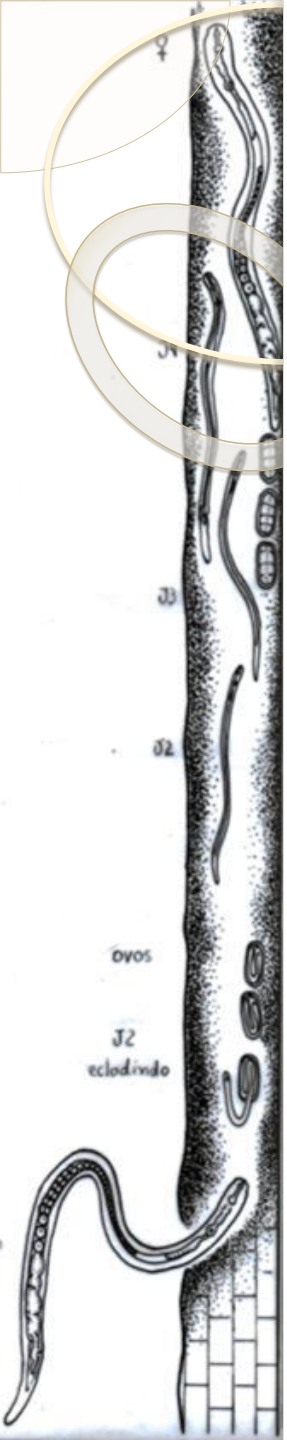
Importância Atual no Brasil



<https://gibran.com.br/mudas/>



<https://www.revistarural.com.br/2019/04/26/estudo-da-esalq-mapeia-o-controle-do-greening/>



Vitis 47 (3), 175–180 (2008)

Impact of citrus nematode (*Tylenchulus semipenetrans*) densities in soil on yield of grapevines (*Vitis vinifera* 'Shiraz') in south-eastern New South Wales

L. RAHMAN¹⁾, H. CREECY²⁾ and B. ORCHARD³⁾

Effect of the initial population density (IPD) groups of *T. semipenetrans* J₂ per kg dry soil on yield and pruning weight of Shiraz, Riverina, NSW, Australia

IPD group (<i>T. semipenetrans</i> J ₂ per kg dry soil)	Yield (kg berries per vine)			Pruning weight (kg per vine)	
	2001	2003	2004	2003	2004
1 (500-3000; average 934)	9.4	10.6	12.2 a	2.1	1.5
2 (3001-6000; average 5064)	8.3	11.4	10.7 ab	1.8	1.5
3 (6001-9000; average 6836)	8.0	10.6	11.8 ab	1.8	1.4
4 (9001-12000; average 11614)	9.2	10.3	10.4 b	1.8	1.3
5 (over 12000; average 19341)	9.1	10.2	10.4 b	1.6	1.2
LSD < 0.05	ns	ns	1.7	ns	ns

Within columns, means (n = 5) with different letters differ by LSD at *P* < 0.05 level, ns = not significant.

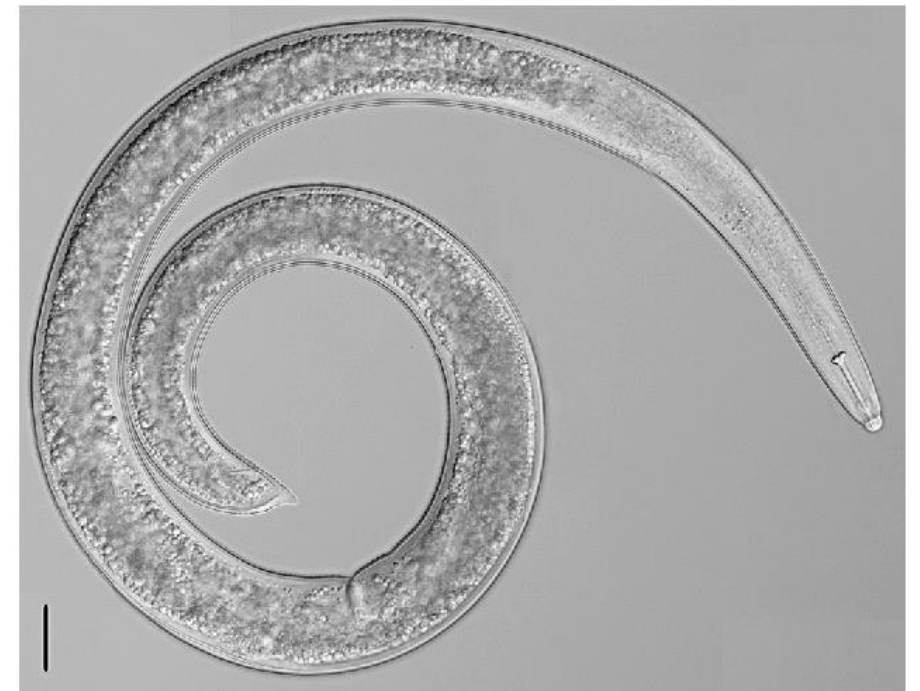
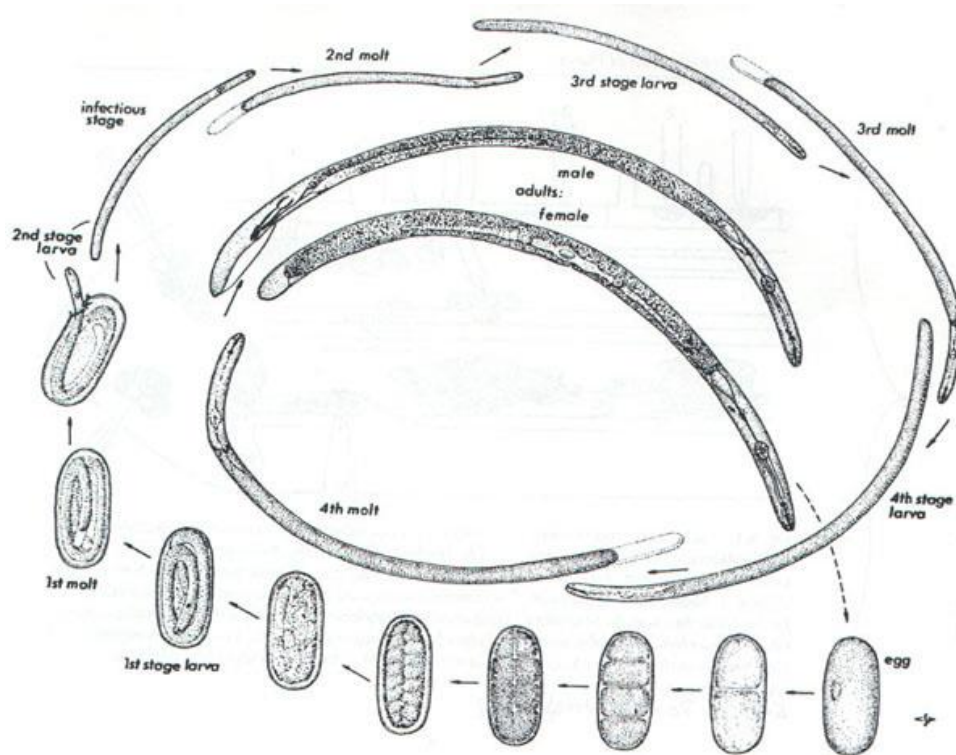
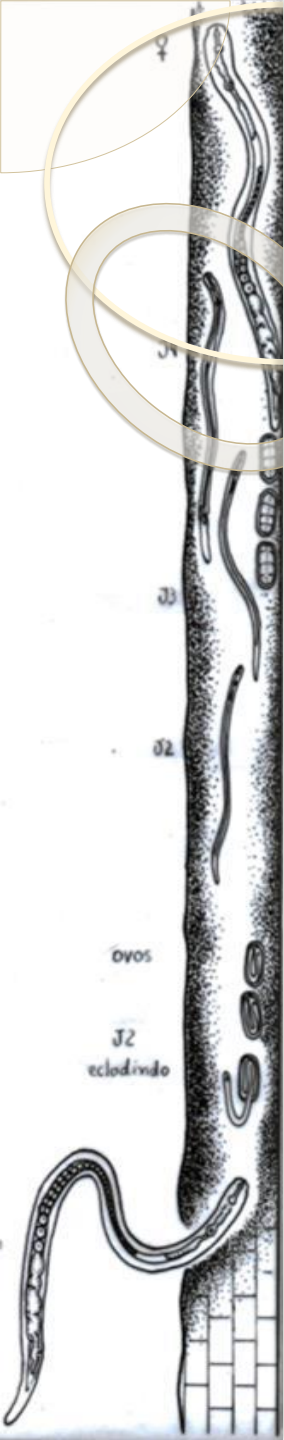
Perguntas?

Rotylenchulus

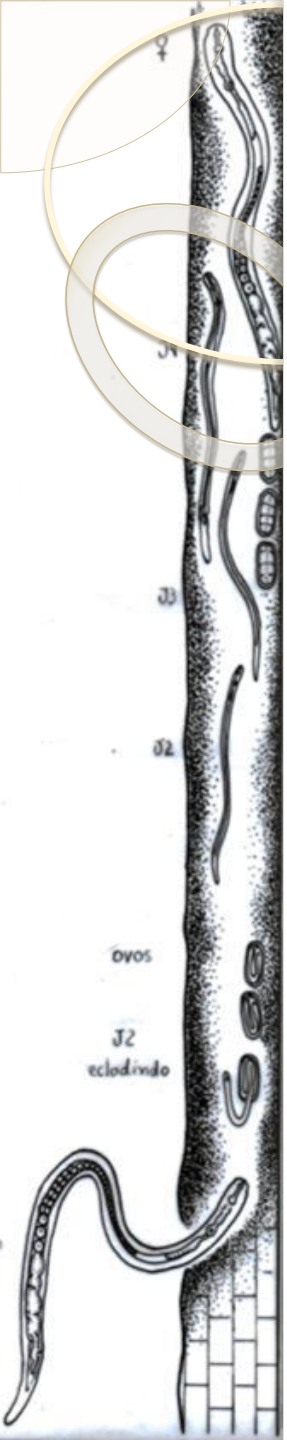
Família Hoplolaimidae

Maioria das espécies é migradora

Formato do corpo espiral (= nematoides espiralados) ou "C" aberto



https://pdfs.semanticscholar.org/d7a9/5b89eecfea48be11d6b4422aed0c141cec11.pdf?_ga=2.155705851.1104090858.1598278282-1392152339.1598278282



Hoplolaiminae

Migrador

Helicotylenchus

Scutellonema

Hoplolaimus

Rotylenchus

Aorolaimus

Aphasmatylenchus

Antarctylus

Rotylenchulinae

Sedentário

Rotylenchulus

Acontylus

Senegalonema

G. Germani, M. Luc & J.G. Baldwin

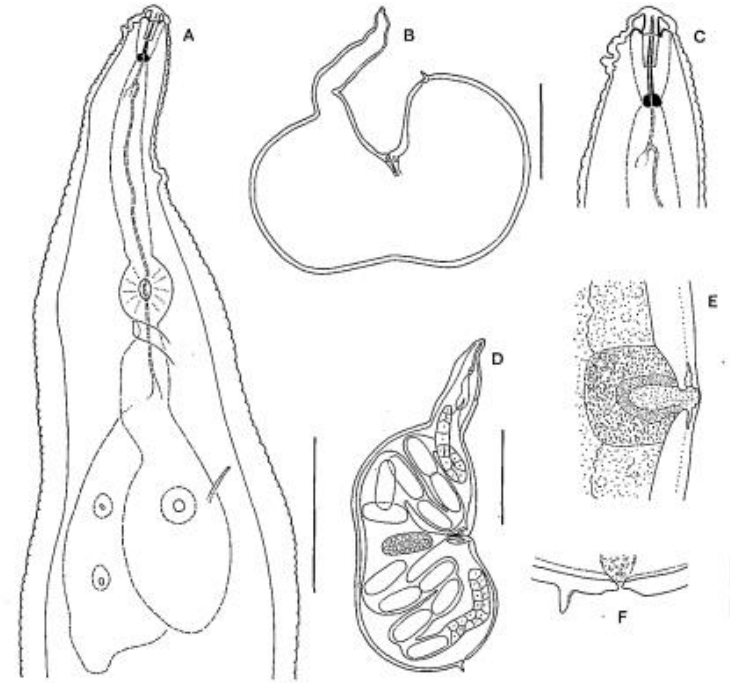
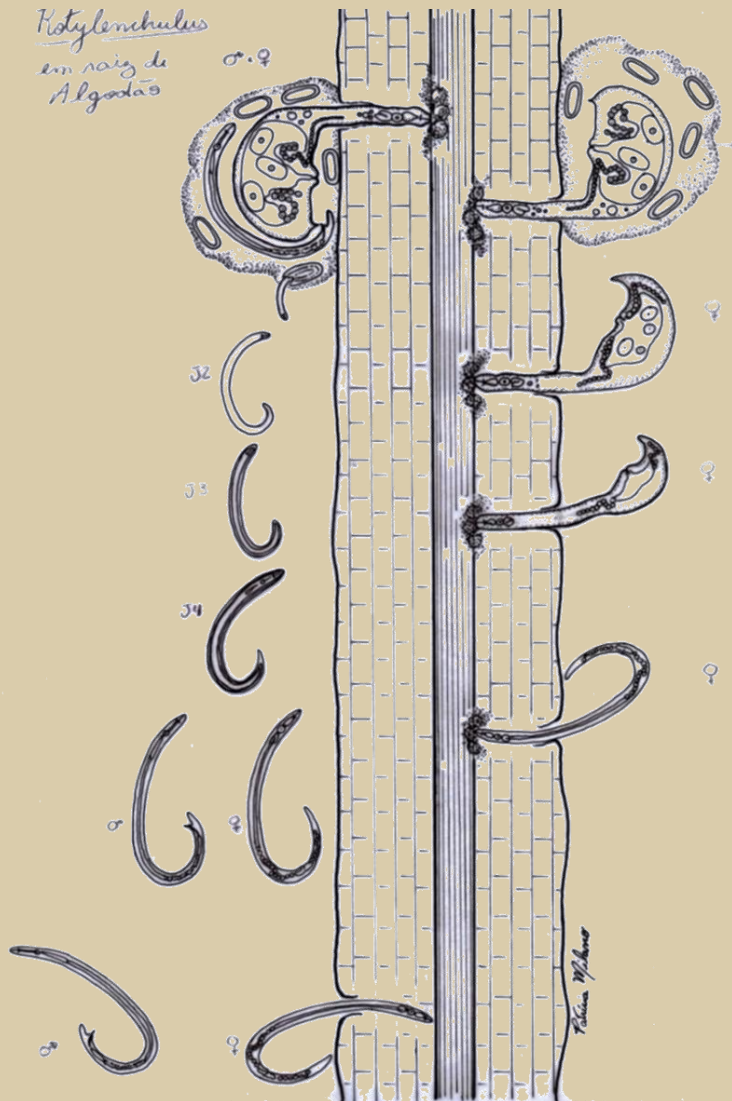


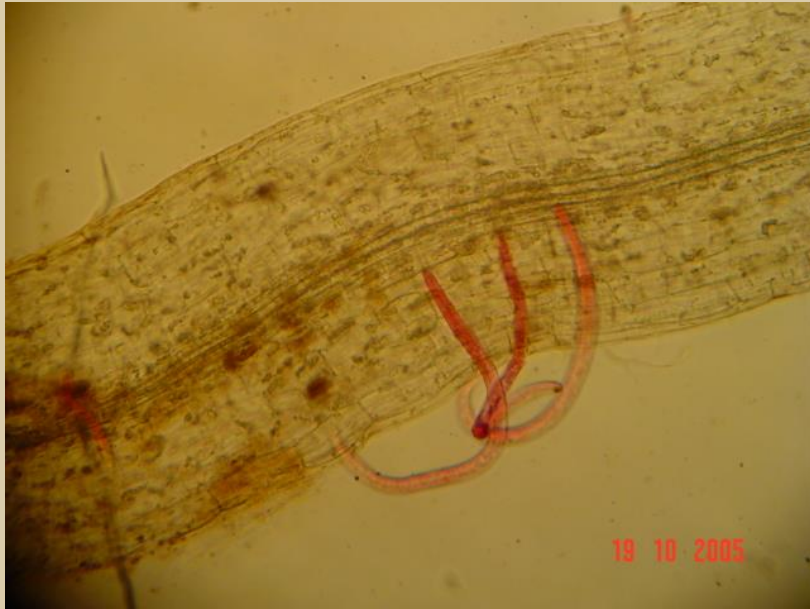
Fig. 2. *Senegalonema sorghi* n. gen., n. sp. Adult female. A : Oesophageal part ; B, D : Animal *in toto* ; C : Anterior part ; E : Detail of phasmid ; F : Tail and anus. (Each bar represents : B, D : 250 μ m ; A : 50 μ m ; C, E, F : 20 μ m).

Rotylenchulus

Ciclo



http://www.cotton.org/tech/pest/nematode/images/Slide2_1.jpg



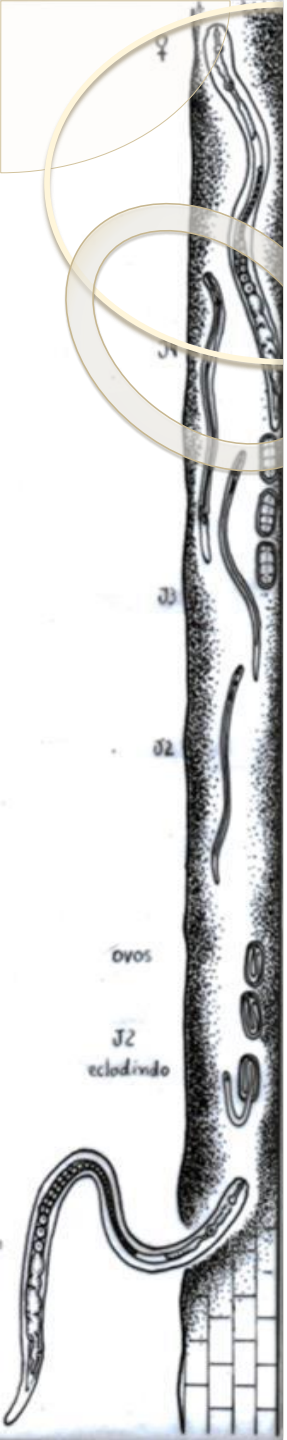
Fotos Guilherme Asmus / Algodão *R. reniformis*

Rotylenchulus

Diversidade

Espécies	Hospedeiros / Distribuição Geográfica
<i>R. reniformis</i>	Polífago (<poáceas); tropical e subtropical.
<i>R. borealis</i>	Milho, batata-doce; Itália, Bósnia, Holanda.
<i>R. brevitubulus</i>	Planta não identificada; Namíbia.
<i>R. clavicaudatus</i>	<i>Strelitzia</i> sp.; África do Sul.
<i>R. leptus</i>	Caupi, bambu; Botswana.
<i>R. macrodoratus</i>	Amendoeira, loureiro, videira; Itália.
<i>R. macrosoma</i>	Polífago; Europa e Ásia.
<i>R. parvus</i>	Polífago (>poáceas); tropical e subtropical.
<i>R. sacchari</i>	Cana; África do Sul.
<i>R. variabilis</i>	<i>Rumex</i> sp.; Botswana.

No Brasil somente *R. reniformis*



Rotylenchulus

Diversidade

Espécies	Hospedeiros / Distribuição Geográfica
<i>R. reniformis</i>	Polífago (<poáceas); tropical e subtropical.
<i>R. borealis</i>	Milho, batata-doce; Itália, Bósnia, Holanda.
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<i>R. clavicaudatus</i>	<i>Strelitzia</i> sp.; África do Sul.
<i>R. leptus</i>	Caupi, bambu; Botswana.
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<i>R. sacchari</i>	Cana; África do Sul.
<i>R. variabilis</i>	<i>Rumex</i> sp.; Botswana.

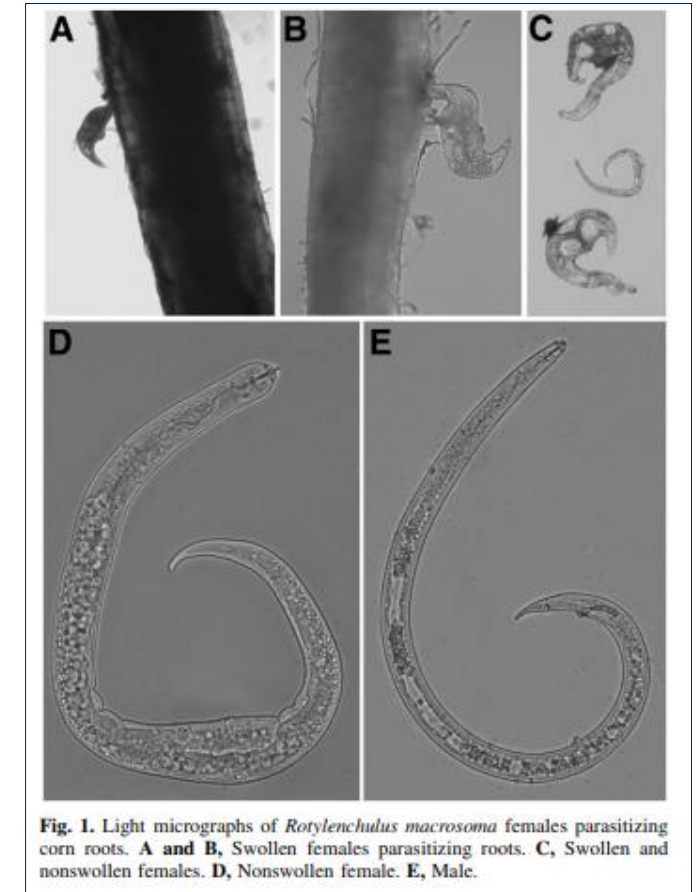


Fig. 1. Light micrographs of *Rotylenchulus macrosoma* females parasitizing corn roots. A and B, Swollen females parasitizing roots. C, Swollen and nonswollen females. D, Nonswollen female. E, Male.

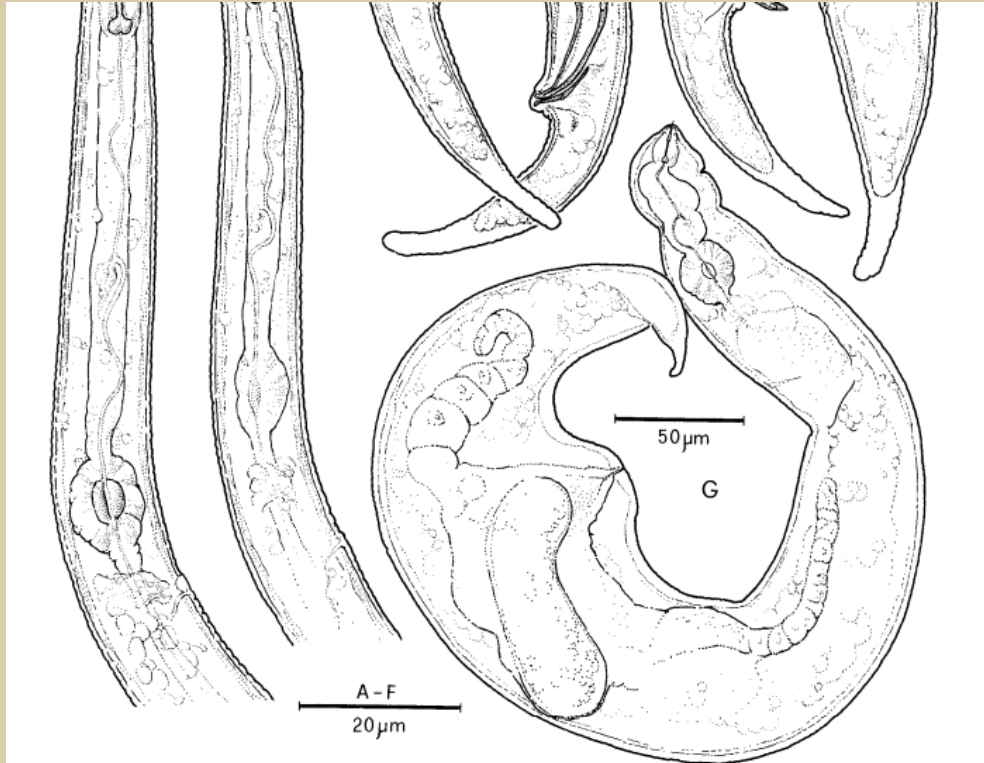


Fig. 1. *Rotylenchulus macrosoma*. A: Anterior, immature female; B: Anterior, male; C, F: Posterior, immature and mature females; D, E: Posterior, male; G: Mature female.

R. macrosoma

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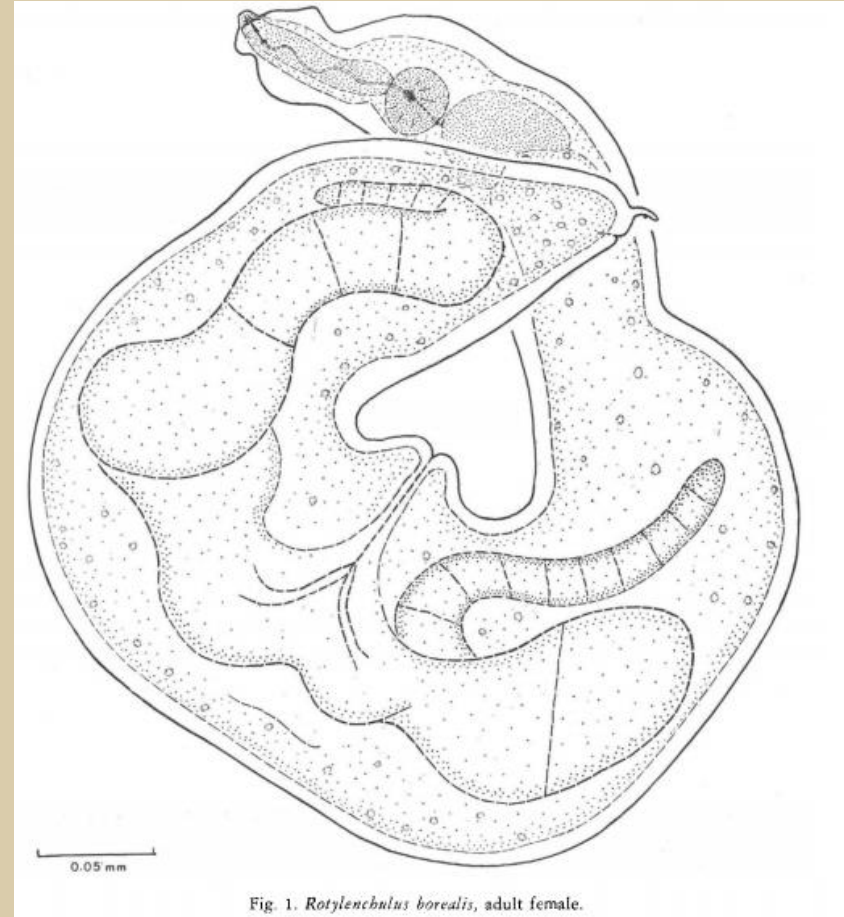


Fig. 1. *Rotylenchulus borealis*, adult female.

R. borealis

https://pdfs.semanticscholar.org/5c12/88be3496a935fe6f704e2ad42ff1797be3b0.pdf?_ga=2.190137579.1104090858.1598278282-1392152339.1598278282

Plant-parasitic nematodes associated with sugarcane in Kilimanjaro, Tanzania

Phougeishangbam Rolish Singh^{1*},
Beatrice E. Kashando^{1,3},
Marjolein Couvreur¹,
Gerrit Karssen^{1,2} and Wim Bert¹

Abstract

Morphological and molecular analyses of plant-parasitic nematodes



The above-ground view of sugarcane showing stunted growth and yellowing of leaves on the field site F13-South of Tanganyika Planting Company Limited in Kilimanjaro. Soil sample analysis from this field revealed the presence of more than 1,000 immature females and males of

Rotylenchulus parvus in 100cc of soil.

Rotylenchulus reniformis

Aspectos Biológicos



Soja / **Foto** Rosana Bessi

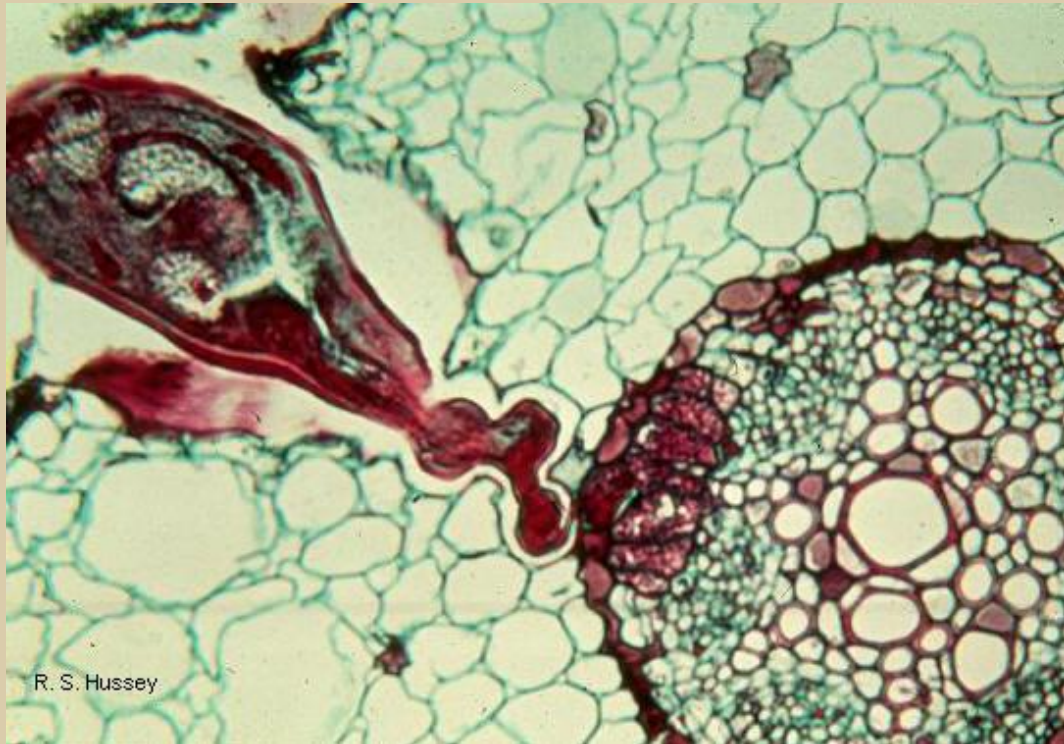
Ciclo 17-29 dias / 28-32°C

60-200 ovos/♀

Sobrevivência 2 anos

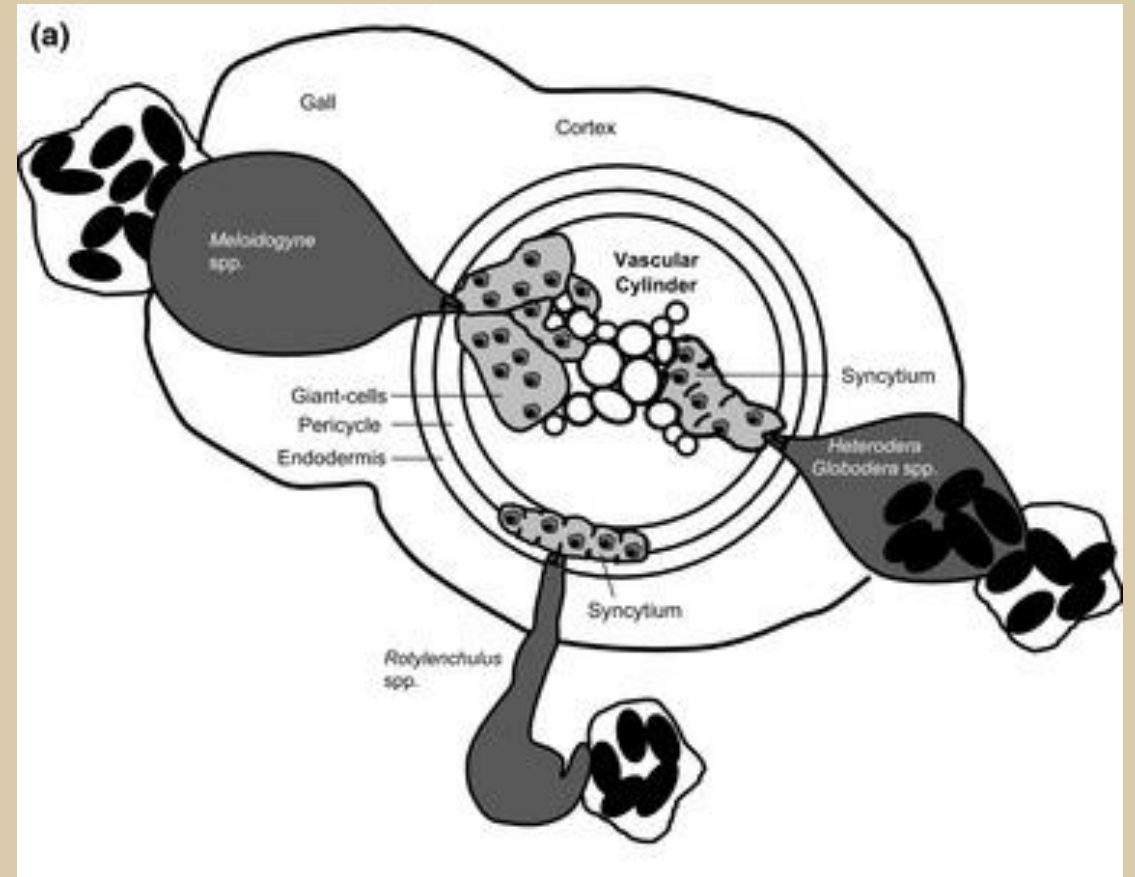


Foto Guilherme Asmus



R. S. Hussey

http://hydrology1.nmsu.edu/teaching/soil698/student_reports/light-microscope/light_microscope/images/Picture28.png



https://www.researchgate.net/publication/236926135_Nematode_effector_proteins_An_emerging_paradigm_of_parasitism

Rotylenchulus reniformis

Principais Hospedeiras

Algodoeiro

Distribuição mundial / Perdas elevadas
Controle por resistência pouco efetivo

Soja

Distribuição mundial / Perdas moderadas
Controle por resistência muito efetivo

Maracujazeiros
(*Passiflora* spp.)

Distribuição mundial
Perdas moderadas

Caupi
Batata-doce

S Estados Unidos
Perdas elevadas

Abacaxi

Havaí (EUA)
Perdas elevadas

Meloeiro

S Estados Unidos / NE Brasil
Perdas moderadas

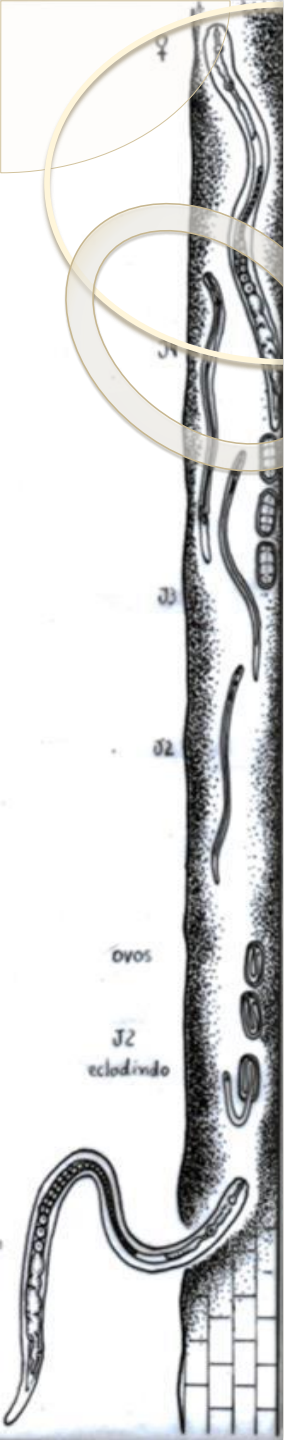
Coentro

NE Brasil
Perdas não estimadas

Mamona

Mamão

Cafeeiro, Bananeira etc

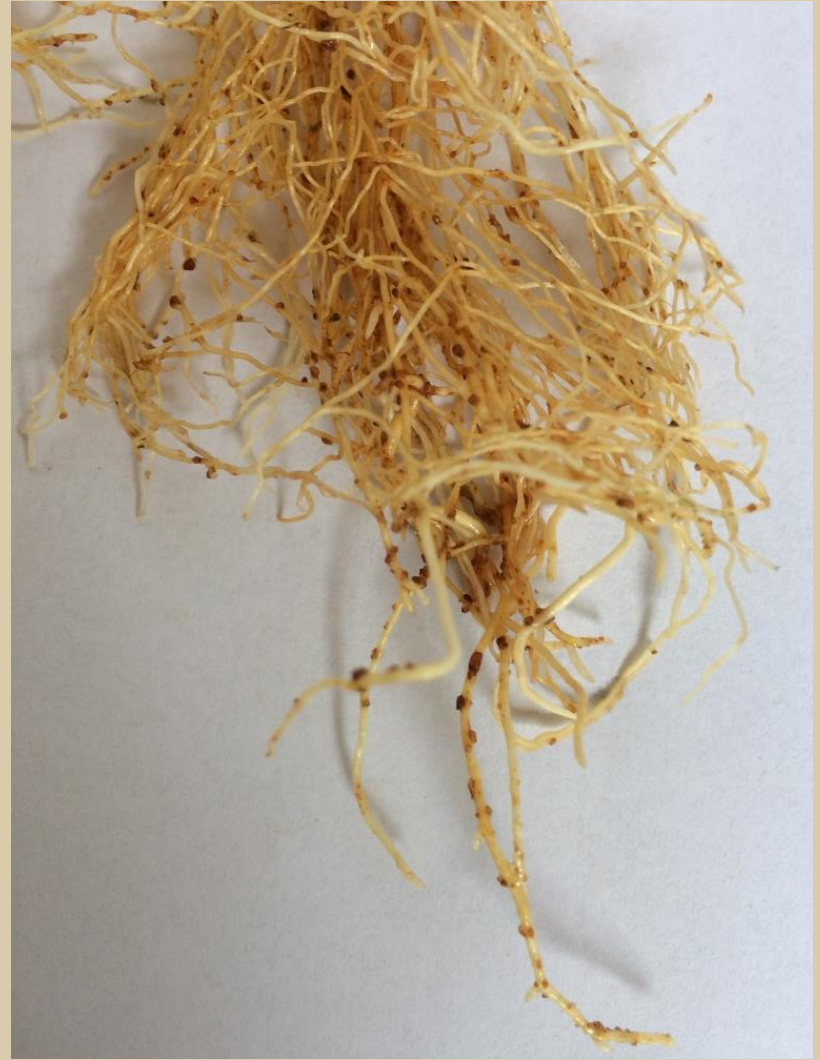


Soja



Fotos Guilherme Lafourcade Asmus

Passiflora edulis



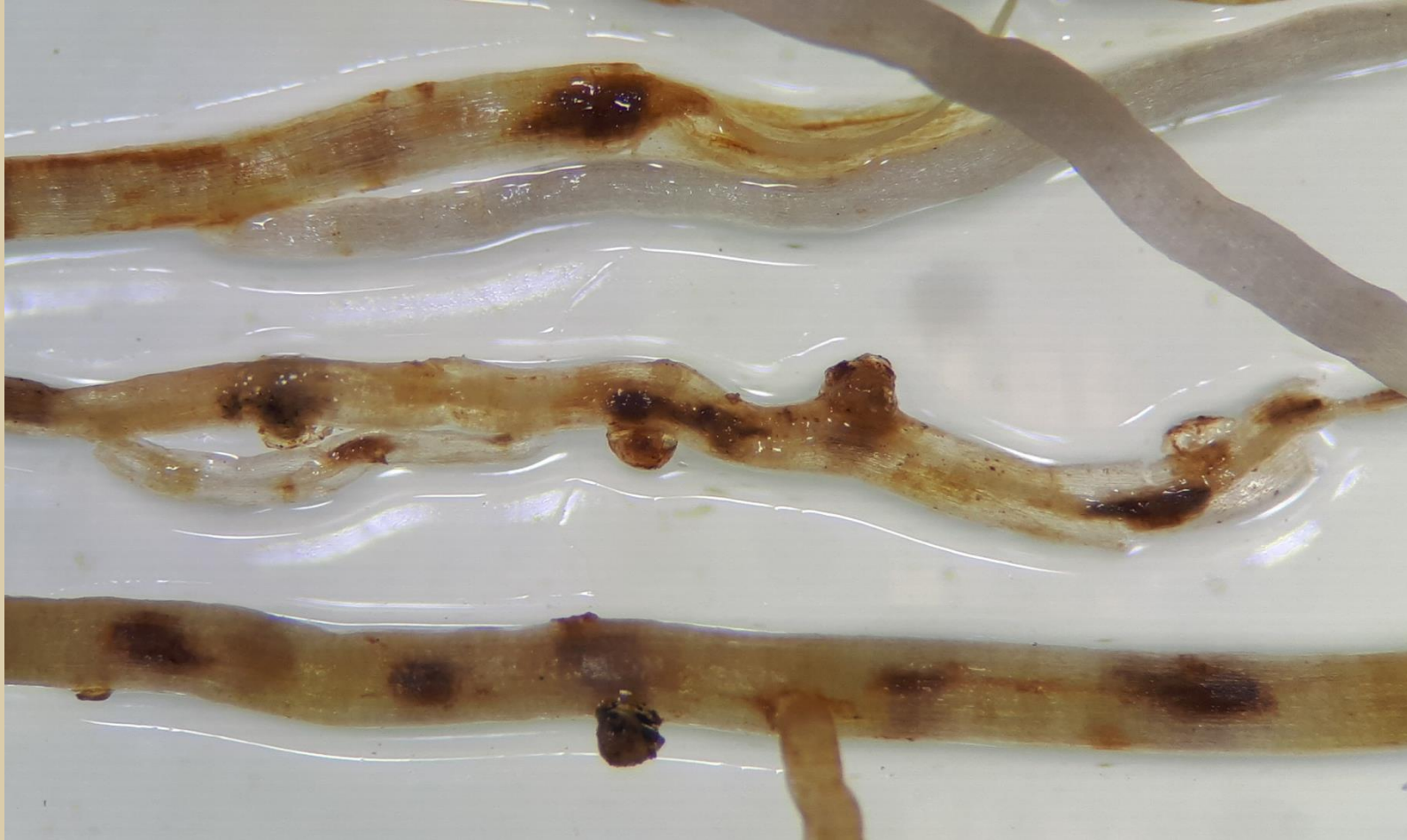
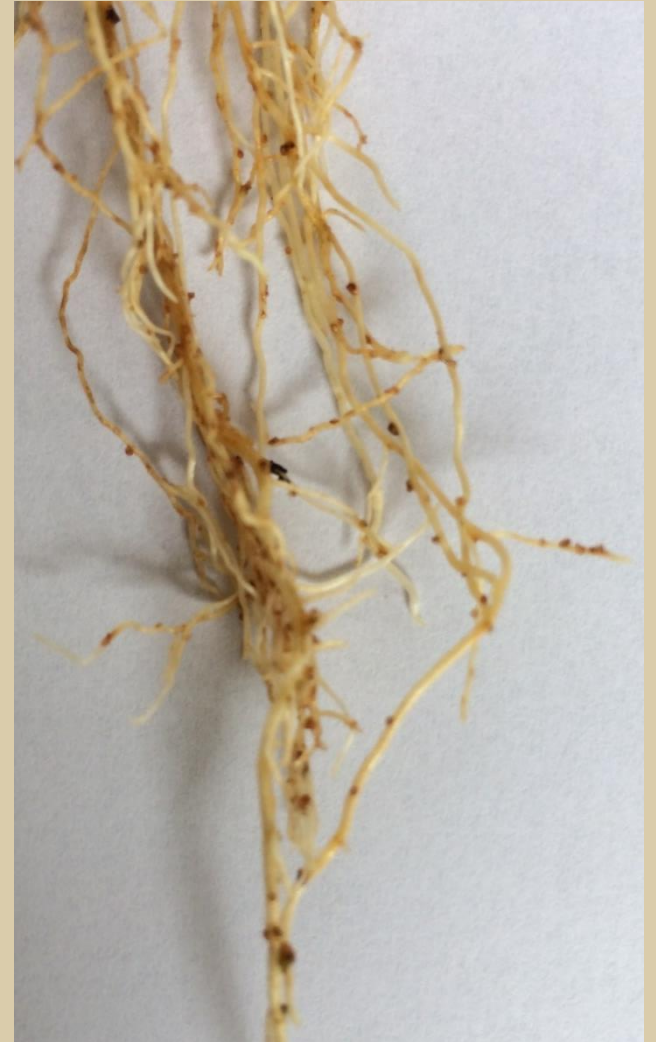


Foto Larissa Costa de Souza (2017)

Passiflora setacea



Batata-Doce

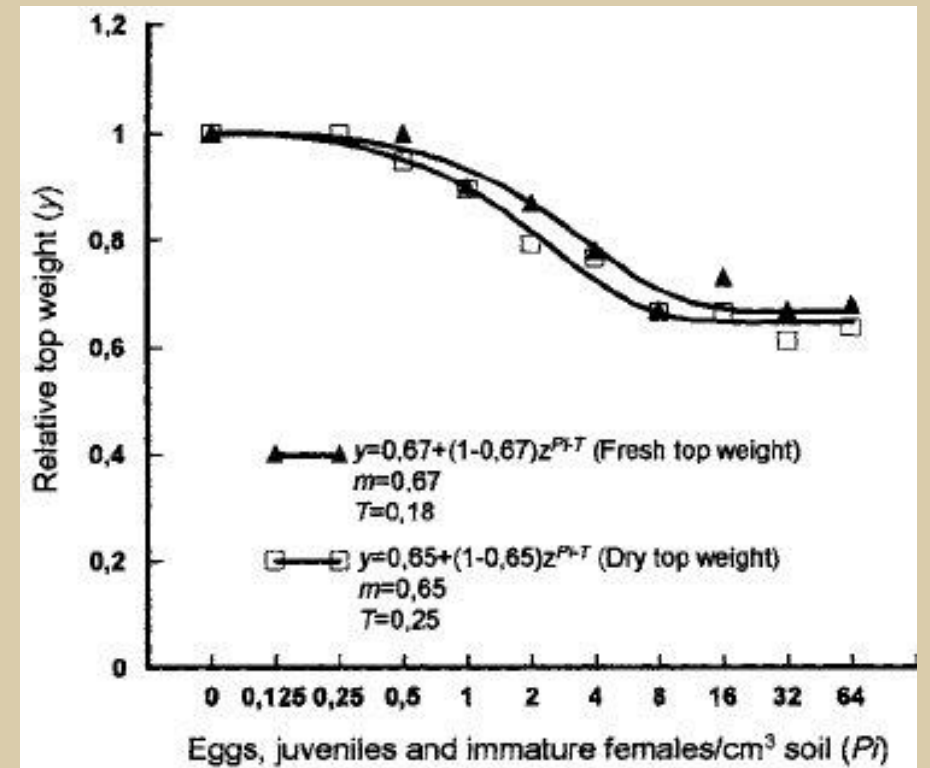


<https://keys.lucidcentral.org/keys/sweetpotato/key/Sweetpotato%20Diagnoses/Media/Html/TheProblems/Nematodes/ReniformNematode/Reniform%20nematode.htm>

Mamão

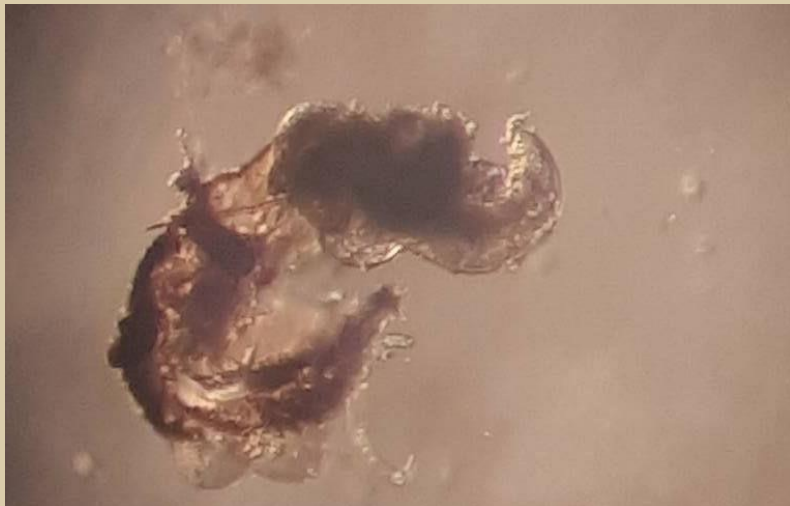


one year old plants of papaya Paraguanera-type in absence of *R. reniformis* (C, No) and infested the nematode (D, Ni)



Crozzoli R (2009). Nematodes of tropical fruit crops in Venezuela. In: Ciancio A. & Mukerji KG. Integrated Management of Fruit Crops and Forest Nematodes. Springer.

Mamona



Fotos Larissa Costa de Souza (2017)

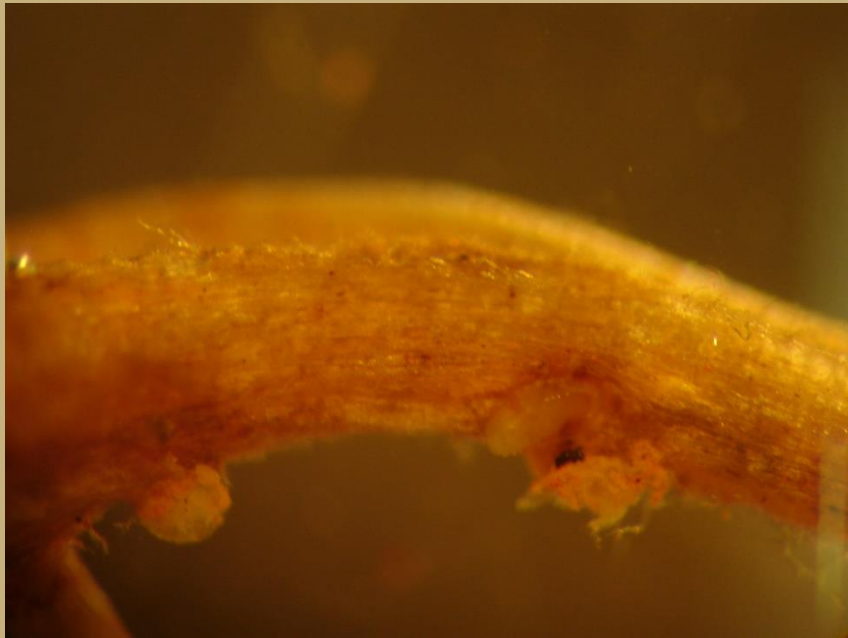
Rotylenchulus reniformis em Algodoeiro



Aral Moreira (MS) 2003 / **Foto** Guilherme Lafourcade Asmus



Fotos Rosana Bessi



Carijó





Itiquira (MT) 2003



Pedra Preta (MT) 2011

Fotos Rosangela Aparecida da Silva



FIGURE 1

Cotton field showing a poor crop stand and dead plants resulting from reniform nematode infection early in the crop growing season.

Rotylenchulus reniformis em Meloeiro

Pathogenicity and Histopathology of Rotylenchulus reniformis Infecting Cantaloup

C. M. HEALD¹

Abstract: *Rotylenchulus reniformis* was pathogenic to cantaloup (*Cucumis melo* 'Perlita') under greenhouse conditions. These findings confirm field symptoms of cantaloup infected with *R. reniformis*. Histopathological studies show that the nematode penetrates the cortex perpendicular to the vascular system and comes to rest with the head against the endodermis in young roots. Feeding stimulated the pericycle to either side of the endodermal feeding cell and caused cell hypertrophy with enlargement of the nucleoli and granular thickening of the cytoplasm. In older roots where the endodermis had collapsed, the nematode fed directly into the pericycle and caused similar symptoms. Nematode development was more rapid at 27 C than at 21 C. *Key Words:* reniform nematode, cantaloup, pathogenicity, histopathology.

Vale do Rio Grande (Tx) Rotação
em algodoads muito infestados com
nematoides!!!

Experimento vasos 2 kg solo
Meloeiro 'Perlita'
54 dias (ramas)

Resultados

Testemunha → 91,9g / 156,3cm
25.000 Rr → 55,8g / 117,7cm

**NEMATOSSES DE ALTA IMPORTÂNCIA ECONÔMICA DA CULTURA DO MELÃO
NO ESTADO DO RIO GRANDE DO NORTE, BRASIL**

ROMERO M. DE MOURA¹, ELVIRA M. R. PEDROSA² & LÍLIAN M. P. GUIMARÃES¹

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Dois Irmãos, 52171-900, Recife, PE; e-mail: romero@yahoo.com.br

(Aceito para publicação em 26/11/2001)



**FIG. 1 - Reboleira em área de meloeiro (*Cucumis melo*)
causada por fitonematóides no Estado do Rio
Grande do Norte.**

Mossoró e Açu (RN)
Meloeiro 'Gold Mine'

R. reniformis
15.000 fm/100 cm³

***Meloidogyne javanica*
e/ou *M. incognita***
5.000 J₂/100 cm³ solo

Perguntas?

Bom Almoço!