LFN-0512 Nematologia

Rotylenchulus

Nematoides do Algodoeiro Parte 2

Universidade de São Paulo
Escola Superior de Agricultura Luiz de Queiroz
Departamento de Fitopatologia e Nematologia
Piracicaba 28 Agosto 2020

Sem.	Dia	Assunto LFN-0512
1	21ago	Informações gerais. *Meloidogyne*. Algodoeiro parte 1
2	28ago	*Rotylenchulus*. Algodoeiro parte 2
3	4set	*Pratylenchus*. Algodoeiro parte 3 / Soja parte 1
4	11set	*Heterodera*. Soja parte 2
5	18set	*Helicotylenchus*	*Scutellonema*. Soja parte 3 / Inhame
6	25set	*Aphelenchoides*. Soja parte 4 / Arroz
7	2out	Nematicidas sintéticos
8	9out	Nematicidas biológicos
9	16out	**Prova 1** (semanas 1-8)
10	23out	*Paratrichodorus*. Milho
11	30out	Cana-de-açúcar
12	6nov	*Bursaphelenchus*. Coqueiro / Dendezeiro (Marcelo Oliveira / Apta)
13	13nov	Ornamentais (Marcelo Oliveira)
14	20nov	Transmissores de viroses. Nematoides quarentenários (Marcelo Oliveira)
15	27nov	*Tylenchulus*	*Radopholus*. Banana / Cítricos
16	4dez	*Ditylenchus*. Alho / Cebola
17	11dez	**Prova 2** (semanas 10-16)
18	18dez	**Repositiva**

Roteiro

1 Gênero *Rotylenchulus*

2 Nematoides na Cultura do Algodoeiro – parte 2 – *R. reniformis*

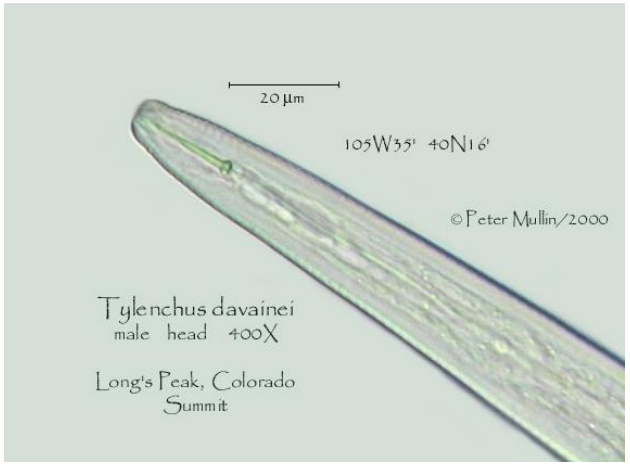
3 Questionário

4 Reunião

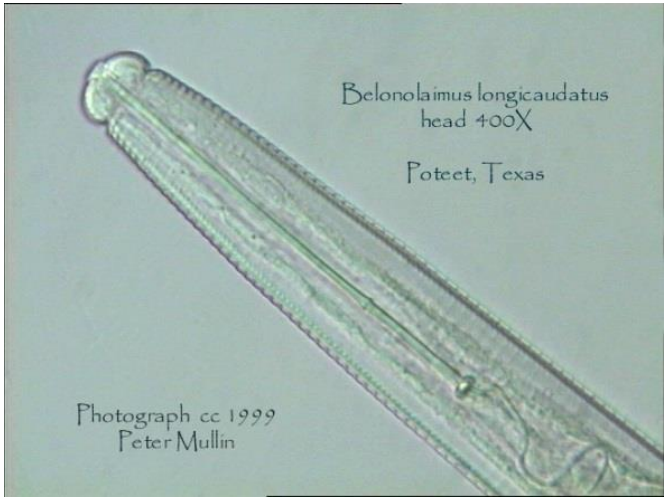
Gênero *Rotylenchulus*

Classe Secernentea (Chromadorea) - estomatostilete
Ordem Tylenchida
Superfamília Tylenchoidea

4 Tylenchidae
5 Anguinidae
6 Belonolaimidae
7 Dolichodoridae
8 Pratylenchidae
9 Hoplolaimidae
10 Heteroderidae
11 Meloidogynidae



http://nematode.unl.edu/tydav12.jpg



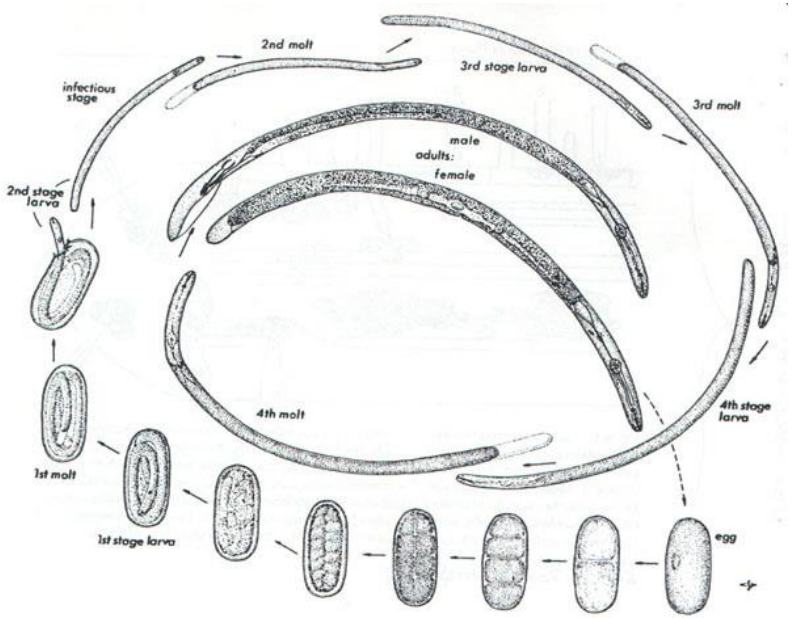
http://nematode.unl.edu/Bstylet.jpg

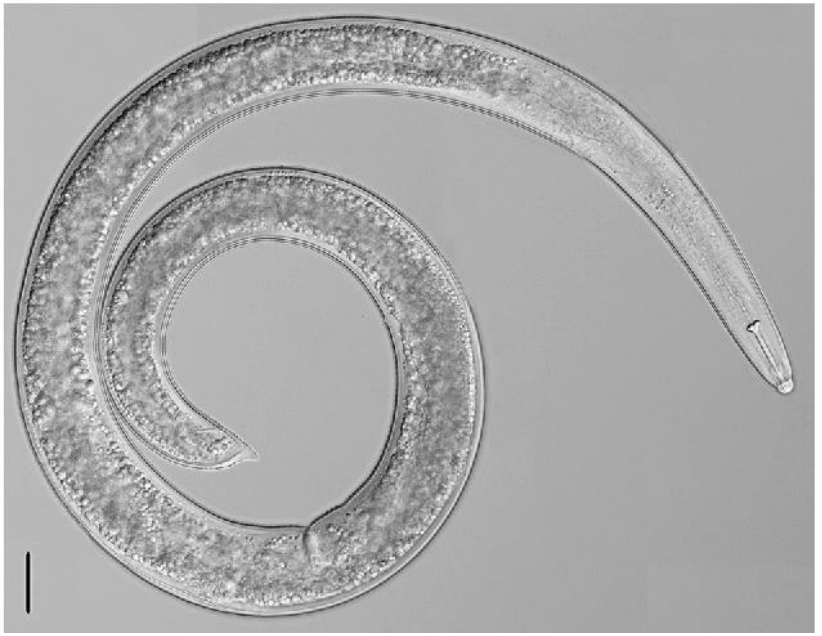
http://www.apsnet.org/publications/apsnetfeatures/Pages/Celegans.aspx

Família Hoplolaimidae

Maioria das espécies é migradora

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

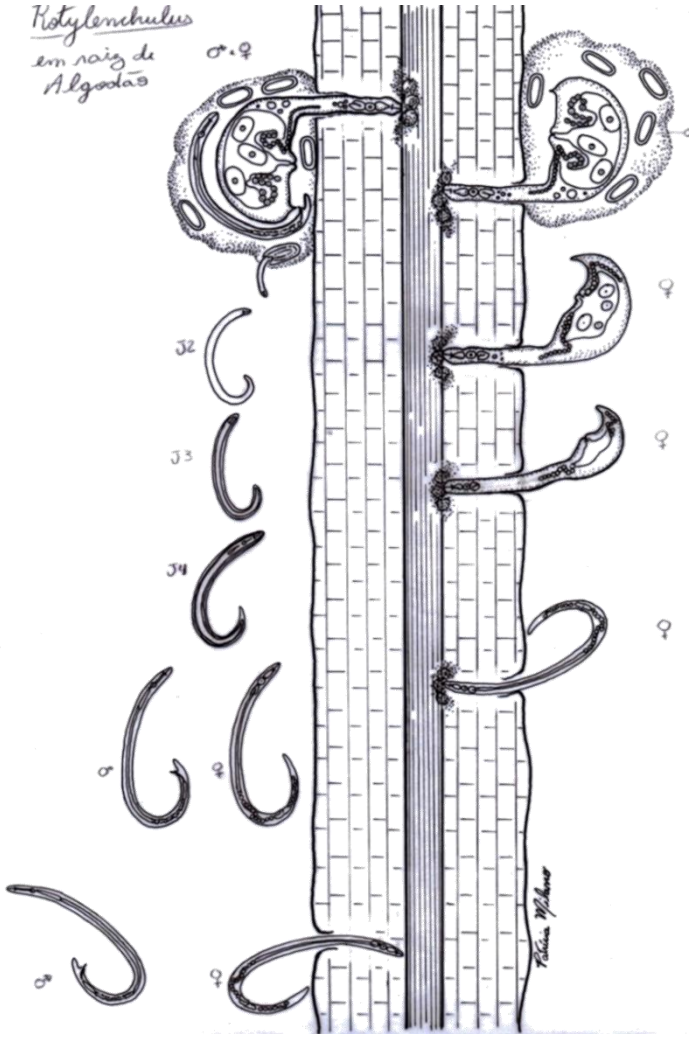




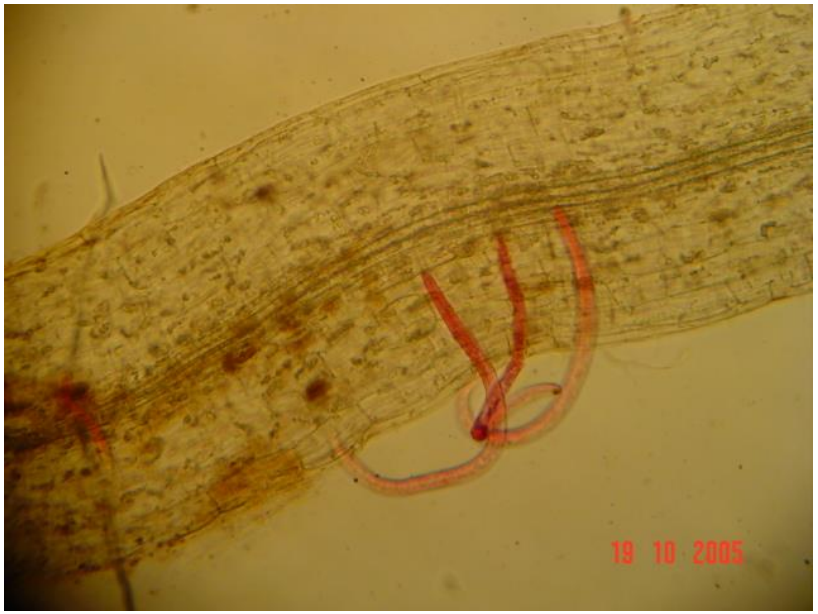
https://pdfs.semanticscholar.org/d7a9/5b89eecfea48be11d6b4422aed0c141cec11.pdf?_ga=2.155705851.1104090858.1598278282-1392152339.1598278282

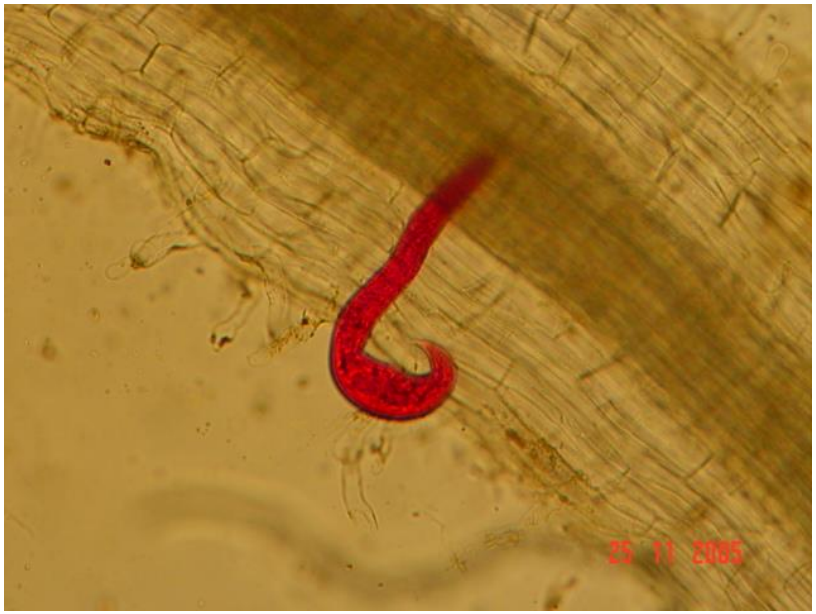
Hoplolaiminae	Rotylenchulinae
Migrador	Sedentário
Helicotylenchus	*Rotylenchulus*
Scutellonema	*Acontylus*
Hoplolaimus	*Senegalonema*
Rotylenchus	
Aorolaimus	
Aphasmatylenchus	
Antarctylus	

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
R. reniformis	Polífago (<poáceas); tropical e subtropical.
R. borealis	Milho, batata-doce; Itália, Bósnia, Holanda.
R. brevitubulus	Planta não identificada; Namíbia.
R. clavicaudatus	*Strelitzia* sp.; África do Sul.
R. leptus	Caupi, bambu; Botswana.
R. macrodoratus	Amendoeira, loureiro, videira; Itália.
R. macrosoma	Oliveira, amendoim, feijoeiro; Israel.
R. parvus	Polífago (>poáceas); tropical e subtropical.
R. sacchari	Cana; África do Sul.
R. variabilis	*Rumex* sp.; Botswana.

No Brasil: somente *R. reniformis*

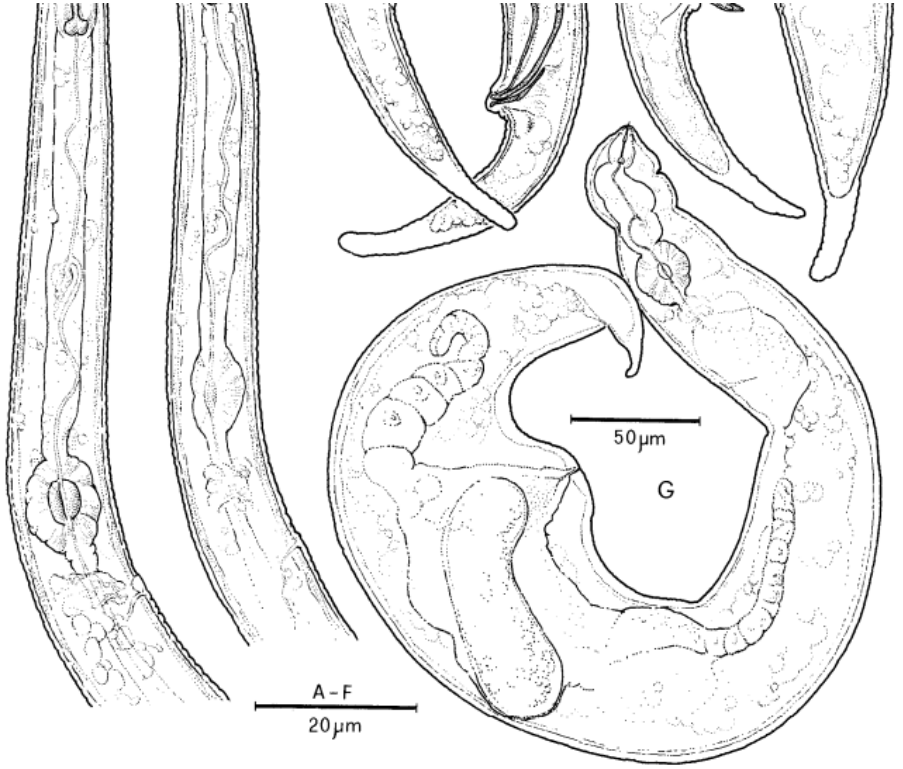


Fig. 1. Rotylenchulus macrosoma *A: Anterior, immature female; B: Anterior, male; C, F: Posterior, immature and mature females; D, E: Posterior, male; G: Mature female.*

R. macrosoma
https://pdfs.semanticscholar.org/7efd/dce6233fa346633606c157981165a84bf94b.pdf?_ga=2.163449340.1104090858.1598278282-1392152339.1598278282

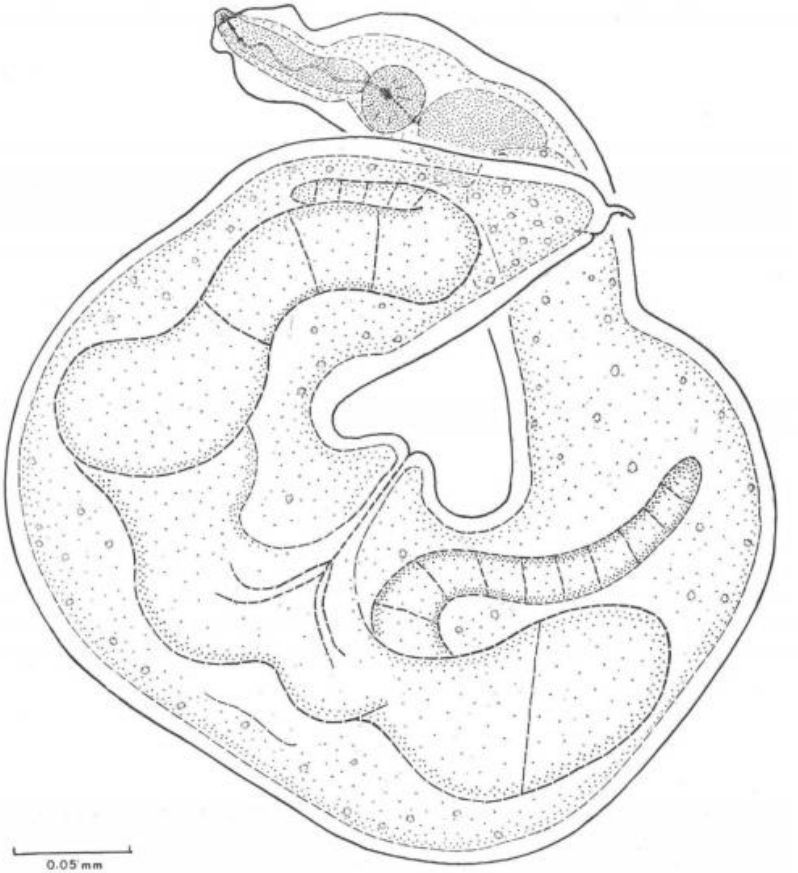


Fig. 1. *Rotylenchulus borealis*, adult female.

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

R. reniformis
Aspectos Biológicos

Soja / **Foto** Rosana Bessi

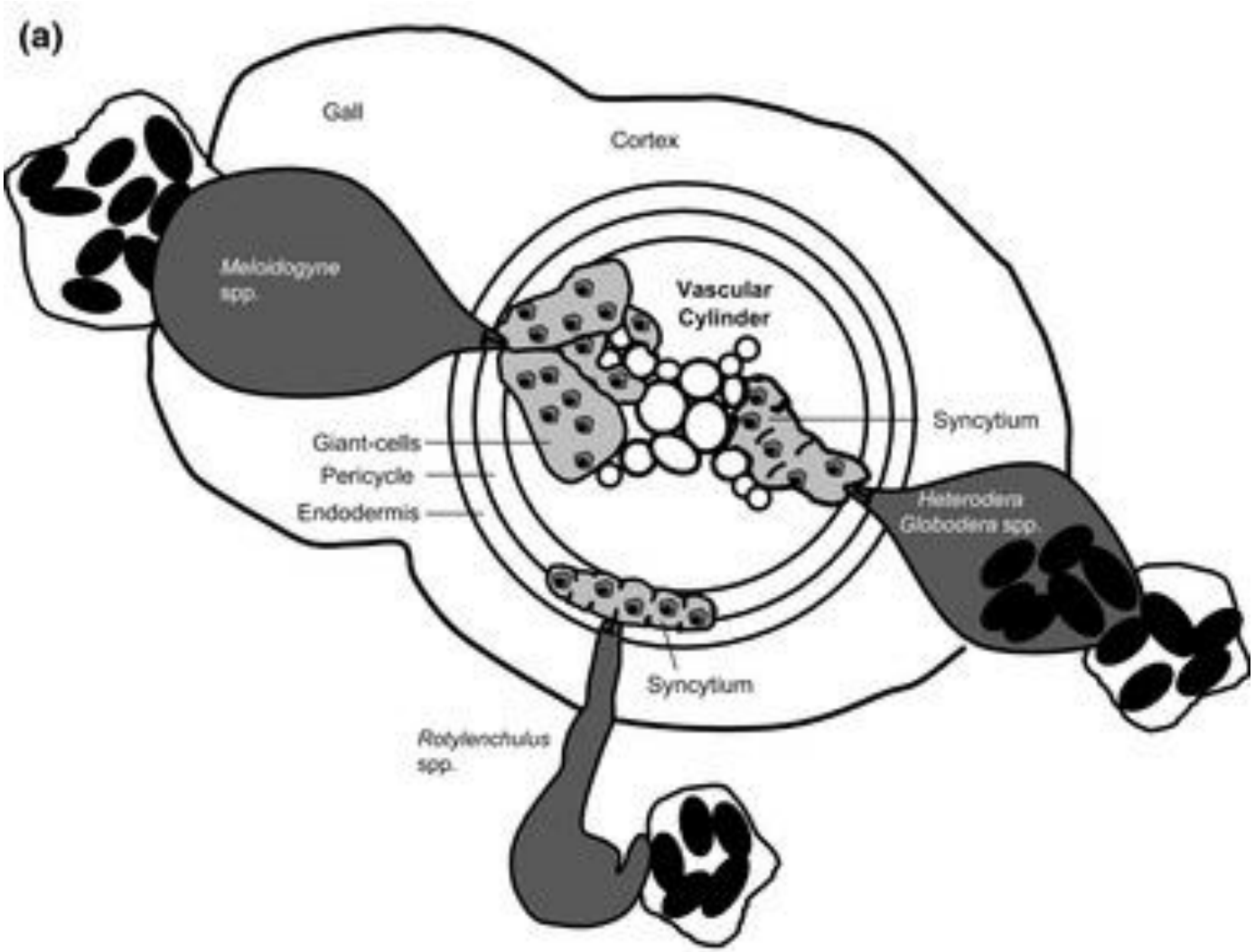
Ciclo 17-29 dias / 28-32ºC

60-200 ovos/♀

Sobrevivência 2 anos

Foto Guilherme Asmus

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

Hospedeiras de *R. reniformis*

Algodoeiro	Distribuição mundial Perdas elevadas Controle por resistência pouco efetivo
Soja	Distribuição mundial Perdas moderadas Controle por resistência muito efetivo
Maracujazeiro-azedo (*Passiflora edulis*)	Distribuição mundial Perdas moderadas
Caupi Batata-doce	S Estados Unidos Perdas elevadas
Abacaxizeiro	Havaí (EUA) Perdas elevadas
Coentro Meloeiro	NE Brasil Perdas não estimadas

Mamona, cafeeiro, mamoeiro, bananeira

Meloeiro

https://www.plantwise.org/KnowledgeBank/datasheet/47892

Fotos Tiarla Souto (2019)

Foto Mário Inomoto (2019)

Pathogenicity and Histopathology of Rotylenchulus reniformis Infecting Cantaloup

C. M. HEALD[1]

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 algodoais muito infestados com nematoides!!!

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

6.000 Rr → ♀ com ovos
21 ºC → 15 dias
27 ºC → 10 dias

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

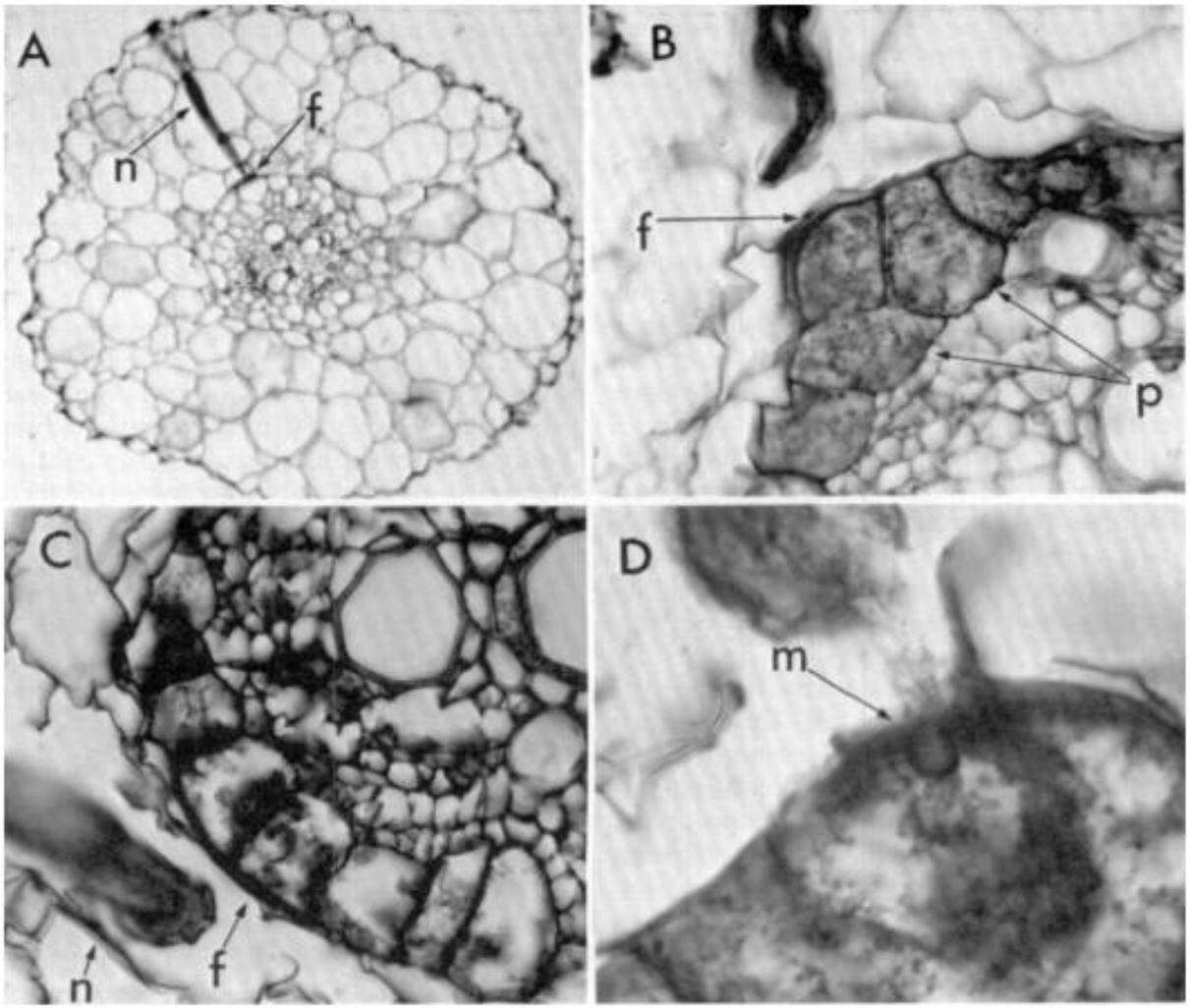


FIG. 1. *Rotylenchulus reniformis* feeding in roots of cantaloup. **A**) Penetration of young female (n) into root with head resting against endodermis (f). **B**) Developed female showing hypertrophied pericycle (p) joining endodermal feeding cell and thickened endodermal cell wall (f) at feeding site. **C**) Developed female (n) feeding directly in pericycle (f). **D**) Feeding site of developed female with digit-like indentation at point of stylet penetration (m).

Heald (1975)

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

ROMERO M. DE MOURA[1], ELVIRA M. R. PEDROSA[2] & LÍLIAN M. P. GUIMARÃES[1]

[1]Departamento de Agronomia, [2]Departamento de Tecnologia de Rural, Universidade Federal Rural de Pernambuco, 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'

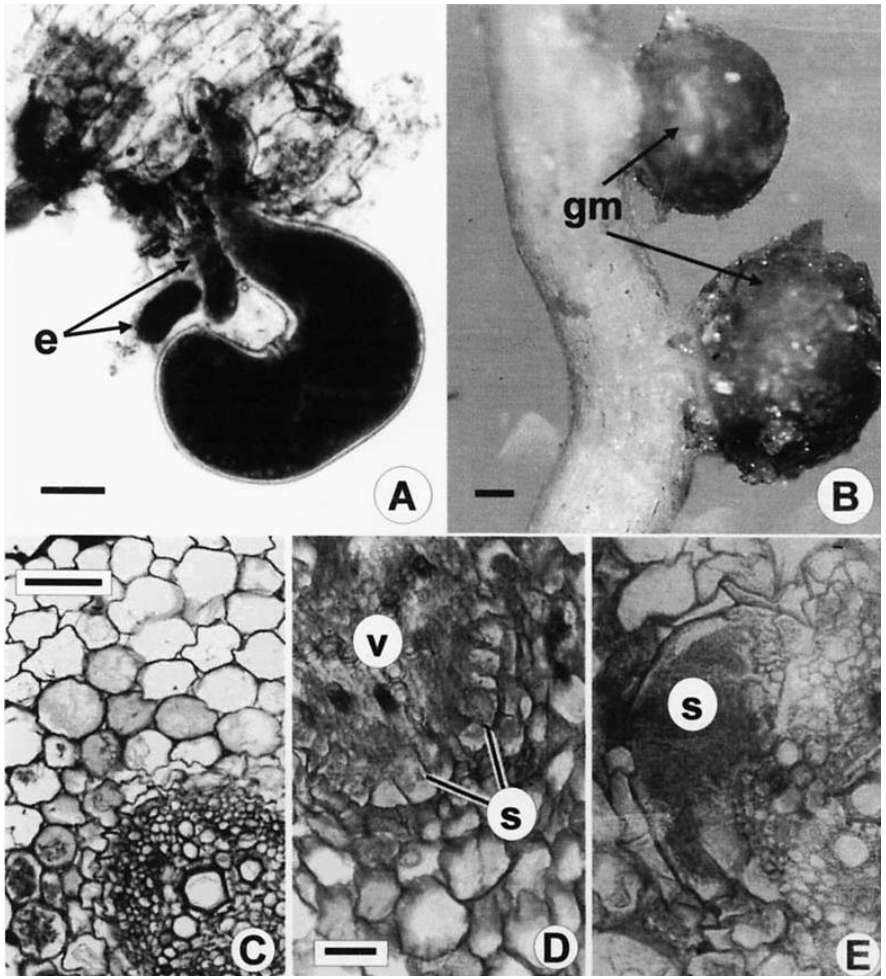
Meloidogyne javanica e/ou *M. incognita*
5.000 J_2/100 cm^3 solo

Rotylenchulus reniformis
15.000 fm/100 cm^3

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.



https://www.researchgate.net/publication/278686639_EFFECT_OF_ROTYLENCHULUS_RENIFORMIS_ON_THE_GROWTH_OF_PAPAYA_IN_POTS

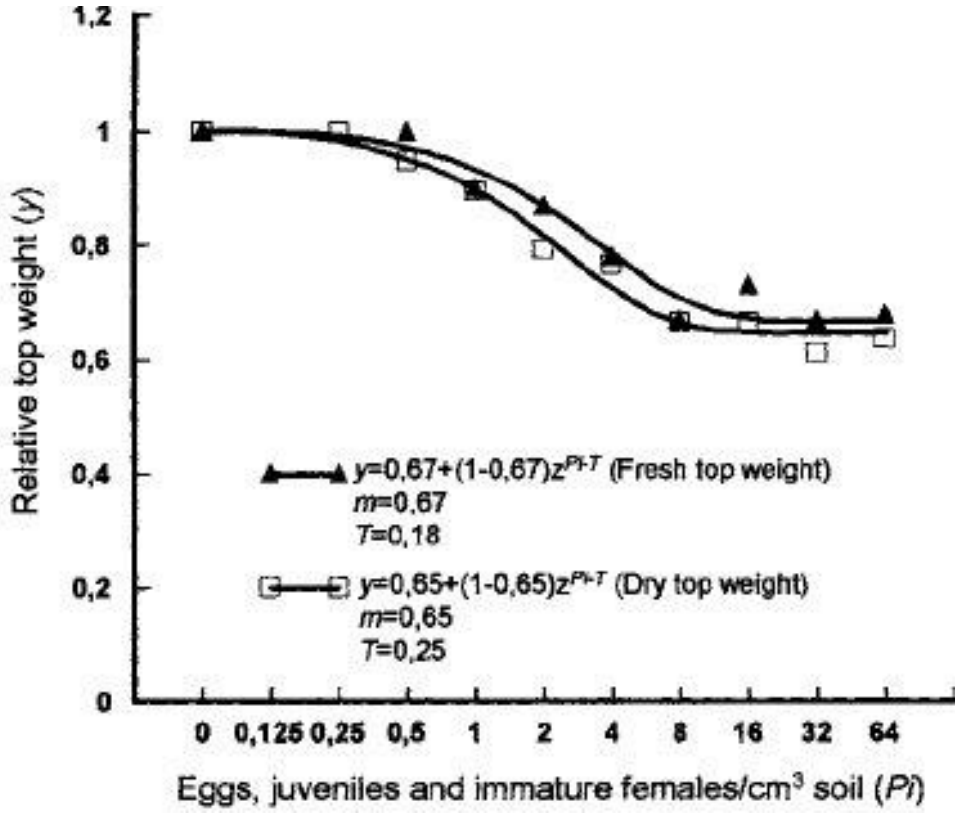
Crozzoli R (2009). Nematodes of tropical fruit crops in Venezuela. In: Ciancio A. & Mukerji KG. Integrated Management of Fruit Crops and Forest Nematodes. Springer.

RESEARCH NOTE - NOTA INVESTIGATIVA

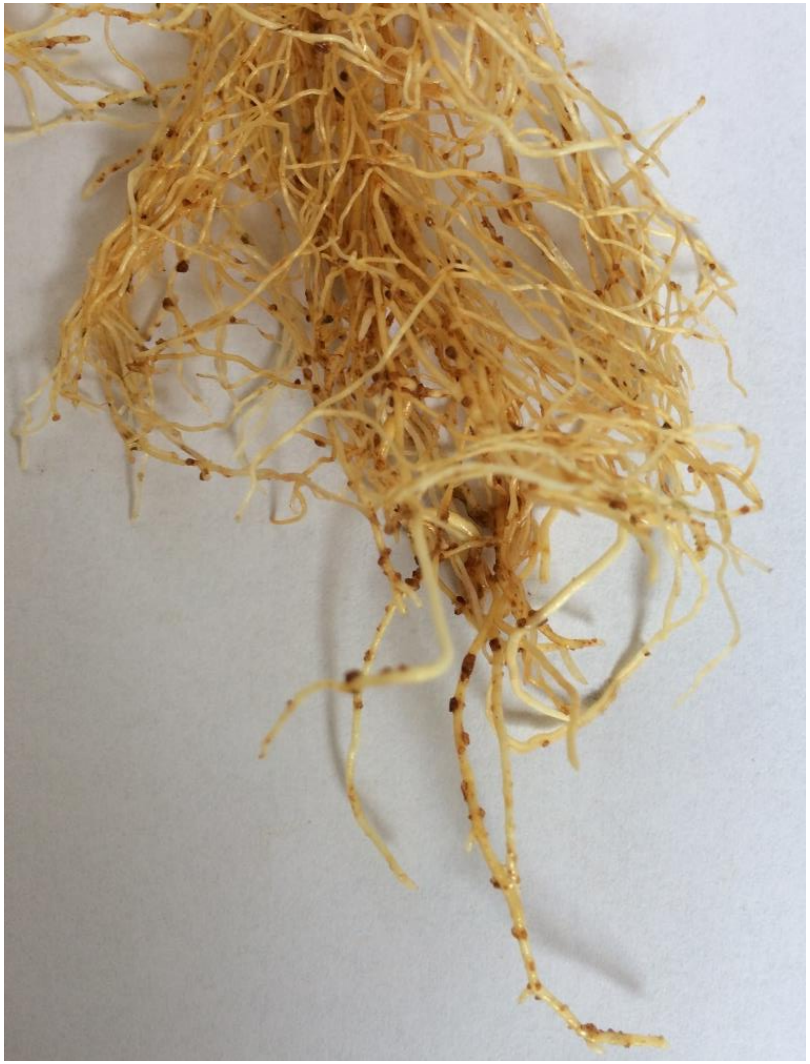
EFFECT OF *ROTYLENCHULUS RENIFORMIS* ON THE GROWTH OF PAPAYA IN POTS

R. Crozzoli[1], G. Perichi[1], N. Vovlas[2] and N. Greco[2]

Universidad Central de Venezuela, Facultad de Agronomía, Instituto de Zoología Agrícola, Laboratorio de Nematología Agrícola, Apdo. 4579, Maracay 2101-A, Venezuela,[1] and C.N.R., Istituto per la Protezione delle Piante, Sezione di Bari, Bari, Italy.[2]



Maracujá-Azedo



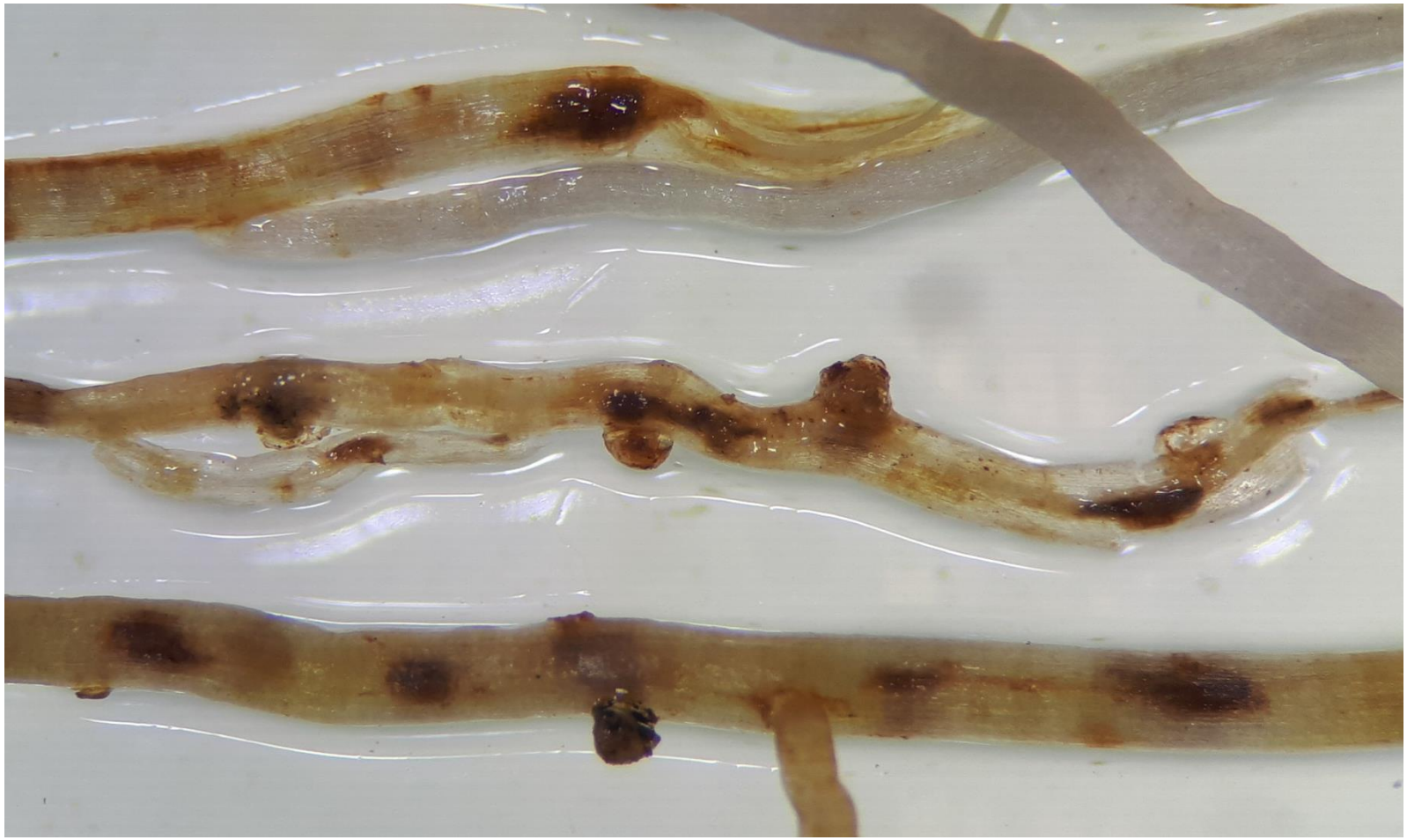
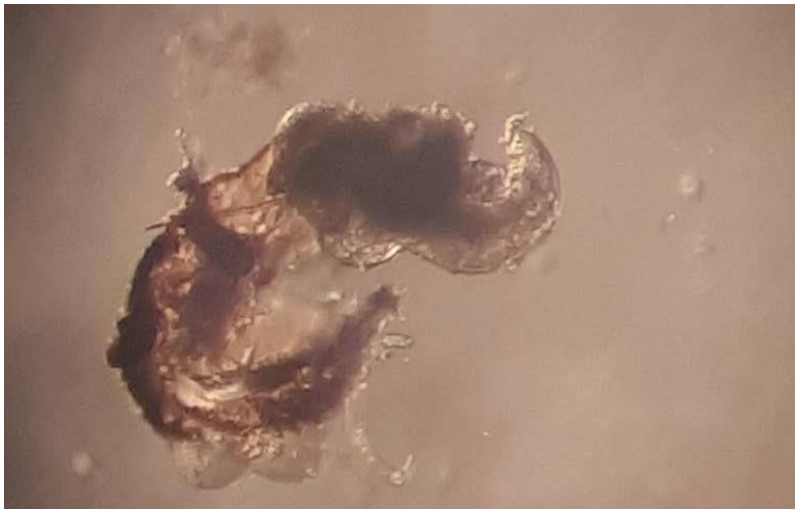


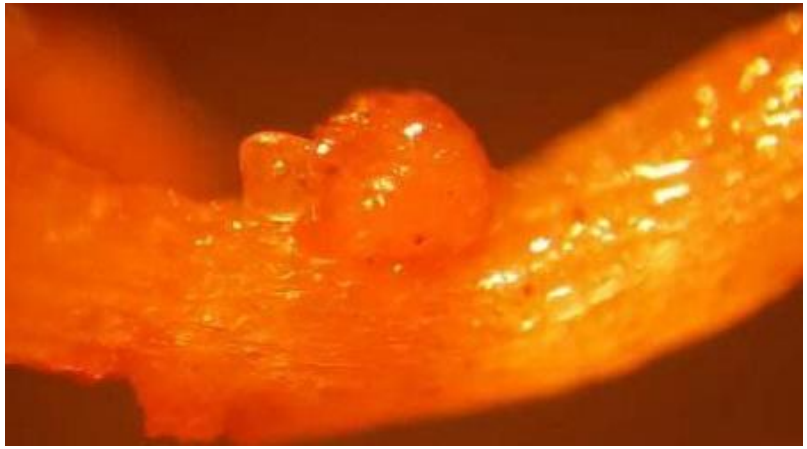
Foto Larissa Costa de Souza (2017)

Maracujá-Silvestre

P. setacea

Mamona





Fotos Larissa Costa de Souza (2017)

Archives of Phytopathology and Plant Protection
Vol. 45, No. 5, March 2012, 522–525

Taylor & Francis
Taylor & Francis Group

Studies on the pathogenicity of three host races of *Rotylenchulus reniformis* on castor

Neelu Singh* and M. Farooq Azam

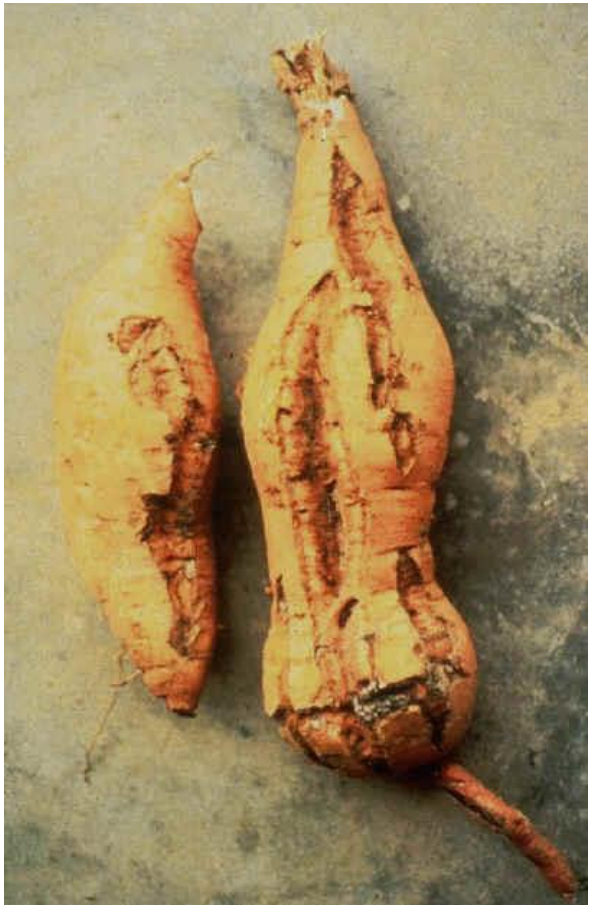
Department of Botany, Aligarh Muslim University, Aligarh, India

(*Received 18 January 2011; final version received 10 March 2011*)

Three races (race 2, 3 and 4) of *Rotylenchulus reniformis* were identified using host differential from 20 populations collected from Aligarh, India. Pathogenicity tests were conducted using 250, 500, 1000, 2000, 4000 and 8000 immature females/kg soil of three races of *R. reniformis* on castor. The threshold inoculum levels of Race-2, Race-3 and Race-4 on castor were 500, 1000 and 2000 immature females/kg soil, respectively. Out of these three races present in Aligarh district, Race-2 was found more pathogenic followed by Race-3 and Race-4. Infected plants with all the three races of reniform nematode showed stunting, necrosis, leaf shedding and growth reduction at and above the inoculum threshold level of each race. Reduction in castor growth was directly proportional to the inoculum level of *R. reniformis*. The rate of nematode multiplication was density dependent.

Keywords: *Rotylenchulus reniformis*; host races; castor; pathogenicity

Batata-Doce



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

Banana / Abacaxi

http://plpnemweb.ucdavis.edu/nemaplex/images/ROTYL2.jpg

http://plpnemweb.ucdavis.edu/nemaplex/images/G116S23.GIF

Nematoides na Cultura do Algodoeiro Parte 2

R. reniformis

Fotos Rosana Bessi

Carijó causado por *R. reniformis*.

Itiquira (MT) 2003

Pedra Preta (MT) 2011

Fotos Rosangela Aparecida da Silva

Carijó

R. reniformis x *M. incognita*

M. incognita

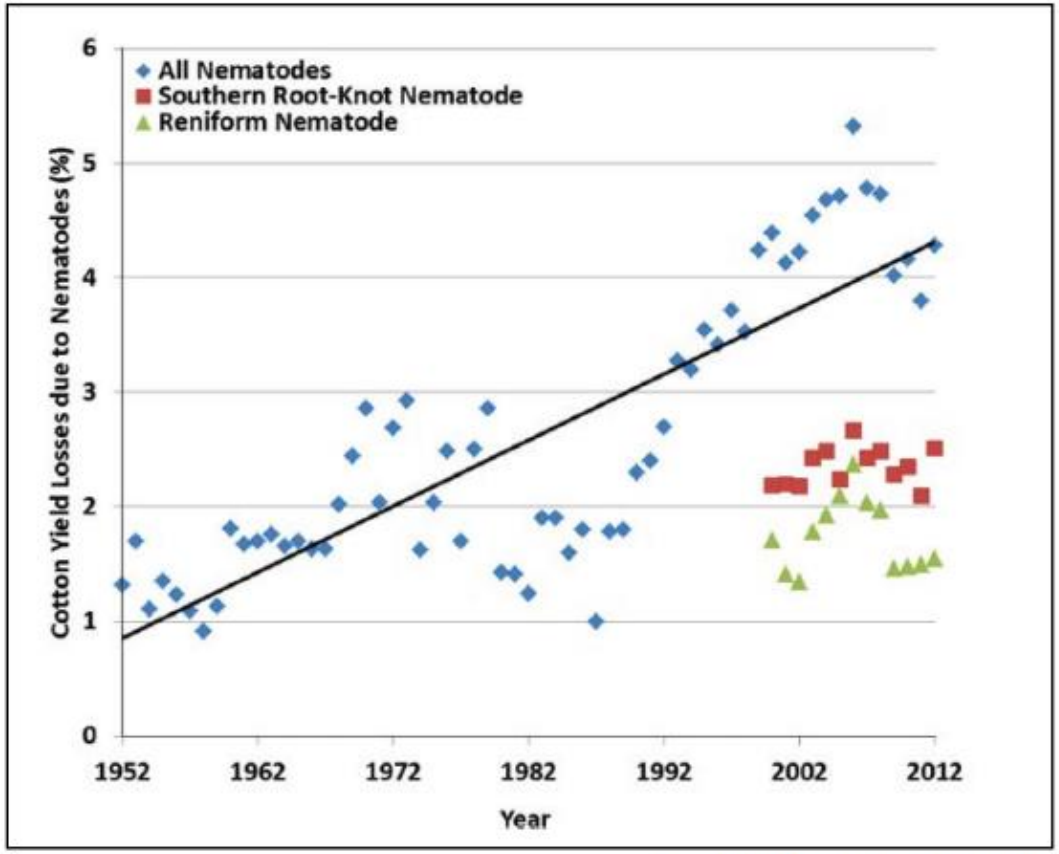
R. reniformis

Foto Guilherme Asmus

FIGURE 1
Cotton field showing a poor crop stand and dead plants resulting from reniform nematode infection early in the crop growing season.

https://apsjournals.apsnet.org/doi/pdf/10.1094/PHYTO-09-17-0320-RVW

Perdas
Estados Unidos



David Weaver (2015)

doi/abs/10.2134/agronmonogr57.2013.0045

Lawrence et al. (2017)
205.000 fardos / ano =
46.484 t / ano

1,3% perdas EUA
(3.500.000 t /ano)

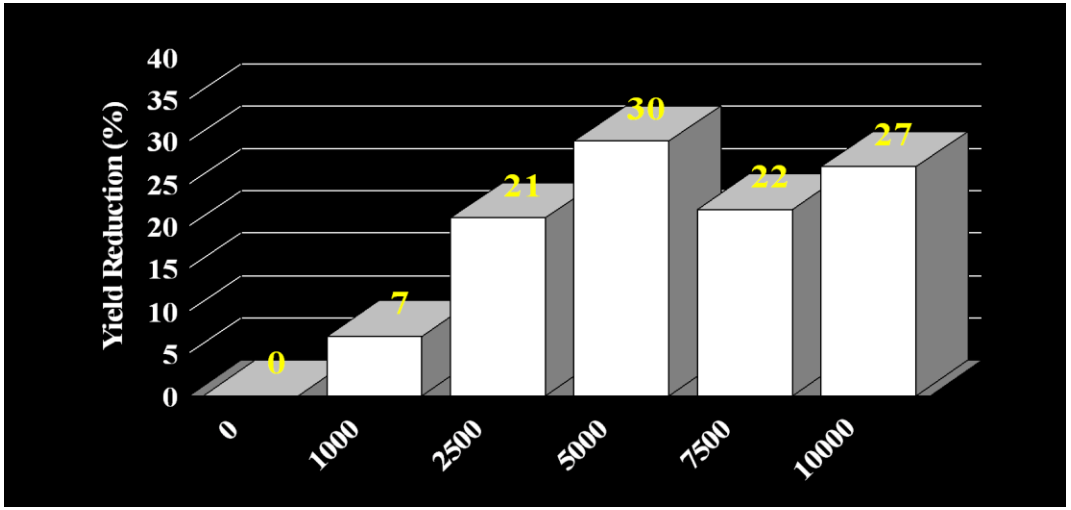
3% Luisiana
4% Mississipi
5% Alabama

11% do total de perdas causadas por doenças do algodoeiro

Limites de Tolerância
Estados Unidos

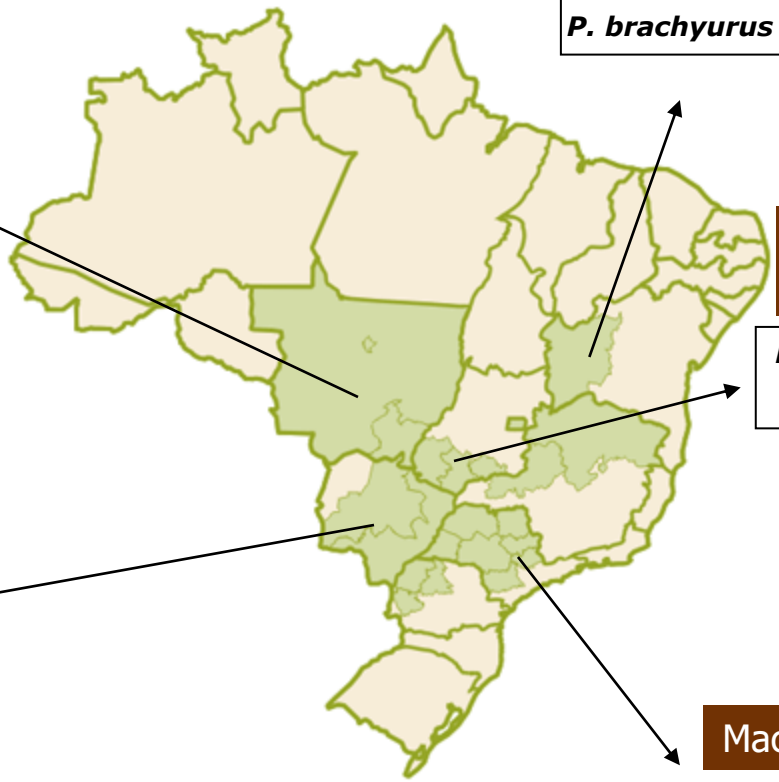
State	Fall	Spring
Alabama	1000	100
Florida	Field history	Soil type
Georgia	250	none
Mississippi	1000	200
Tennessee	1000	200

Alabama



Lawrence *et al.*
http://player.slideplayer.com/24/7525666/data/images

Ocorrência
Brasil



Silva *et al*. (2002) - 623 amostras

Espécies	Média	Frequência
M. incognita	148	3,7%
P. brachyurus	65	94%

Inomoto (2004) – 55 amostras

Espécies	Média	Frequência
M. incognita	680	76,3%
P. brachyurus	135	100%

Gielfi *et al* (2003) 187 amostras

P. brachyurus	79%
M. incognita	54 %

Asmus & Comunelo (2004) – 184 amostras

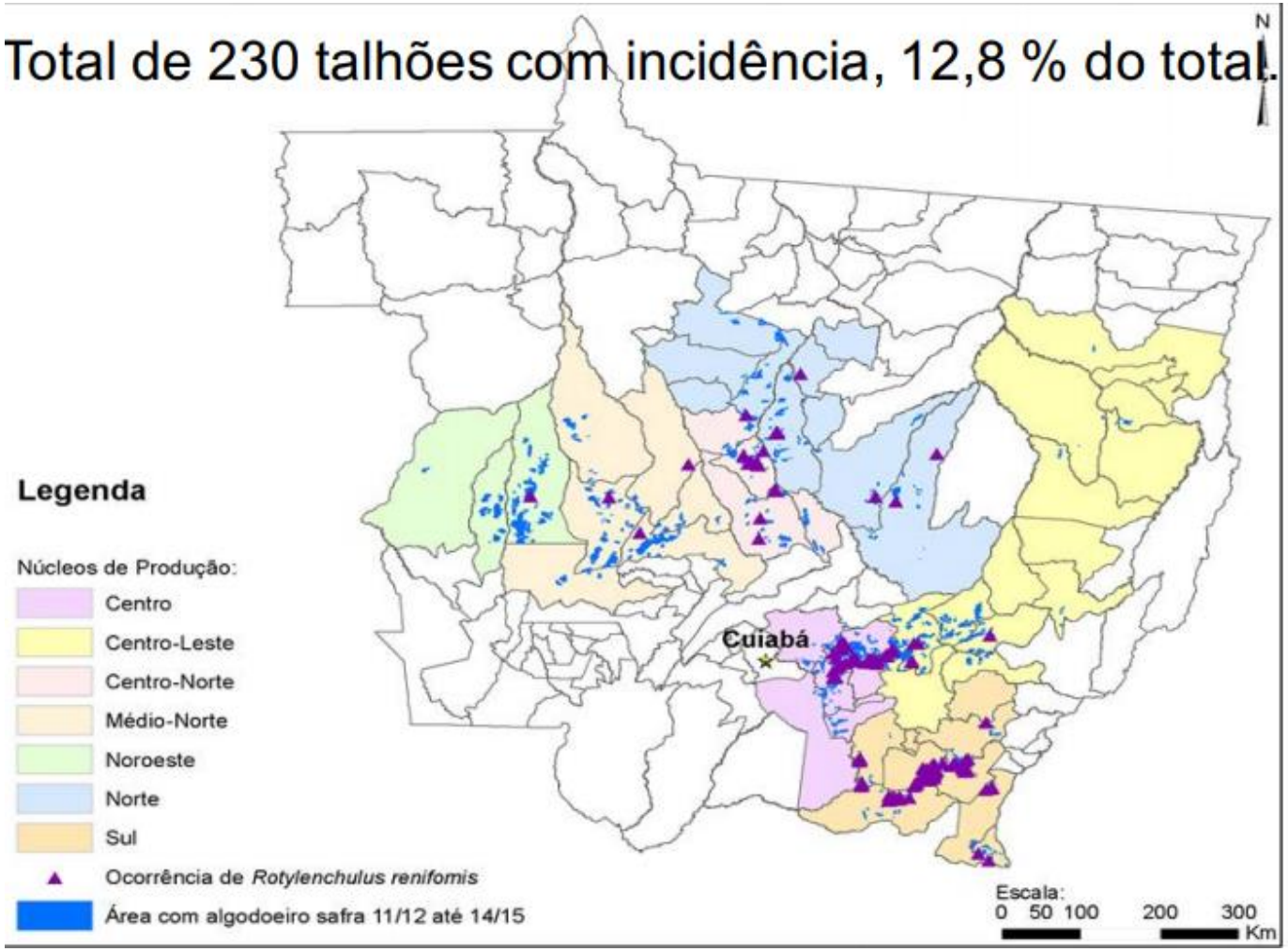
Espécies	Média	Frequência
M. incognita	260	27,7%
P. brachyurus	41	65,2%
R. reniformis	997	16,8%

Machado (2005)

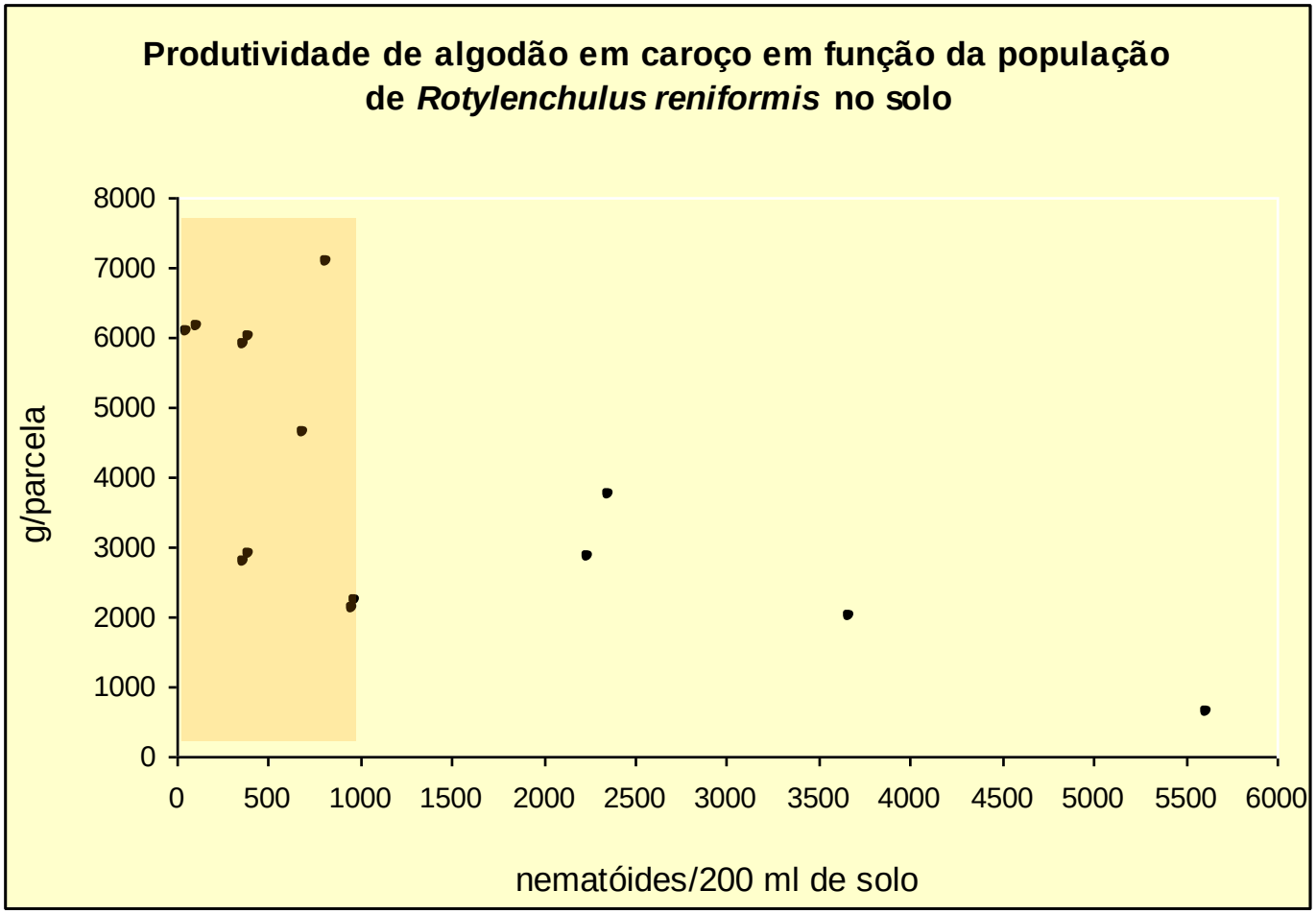
Espécies	Média	Frequência
M. incognita	121	7,7%
P. brachyurus	116	83,3%
R. reniformis	5.846	92,3%

Levantamento da ocorrência de fitonematoides e danos associados à cultura do algodoeiro no estado de Mato Grosso.

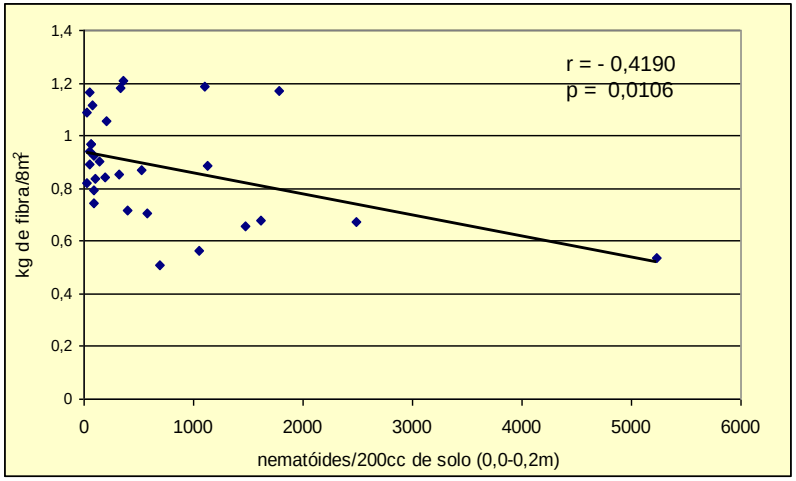
Rafael Galbieri[1]; João Flávio Veloso Silva[2]; Guilherme L. Amus[3]; Carlos M. P. Vaz[4]; Álvaro L. O. Salles[1]; Silvio Crestana[4]; Élio D. Torres[1]; Auster Farias[2]; Valeria O. Faleiro[2]; Fernando M. Lamas[3]; Luiz G. Chitarra[5]; Sandra M. Rodrigues[5]; Eduardo S Matos[2]; Silvio T. Spera[2]; Ciro Magalhães[2]; Cornélio A. Zolin[2]; Ari B. Ribeiro[1]; Tânia F. S. Santos[6]; Neucimara R. Ribeiro[6]; Antônio A. E.L. Oliveira[1].

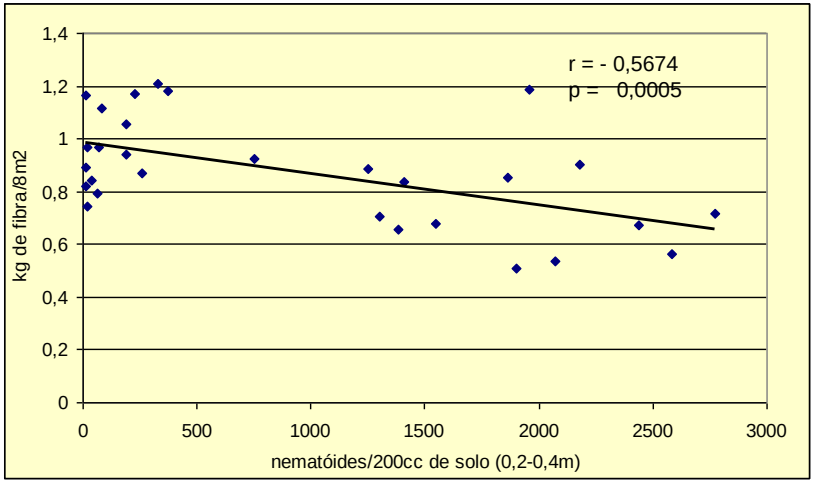


Perdas
Brasil – Mato Grosso do Sul

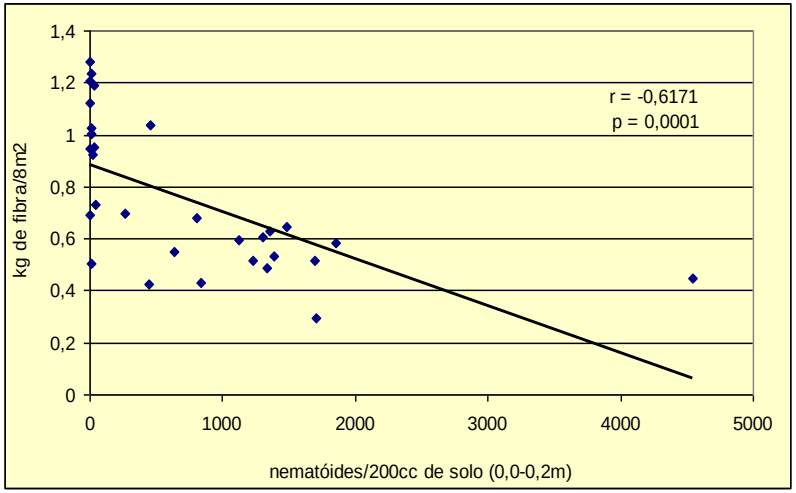


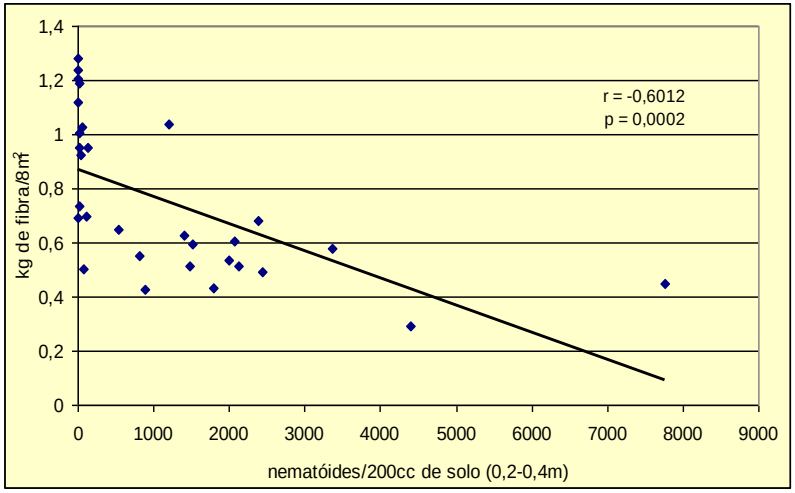
2004/2005





2005/2006

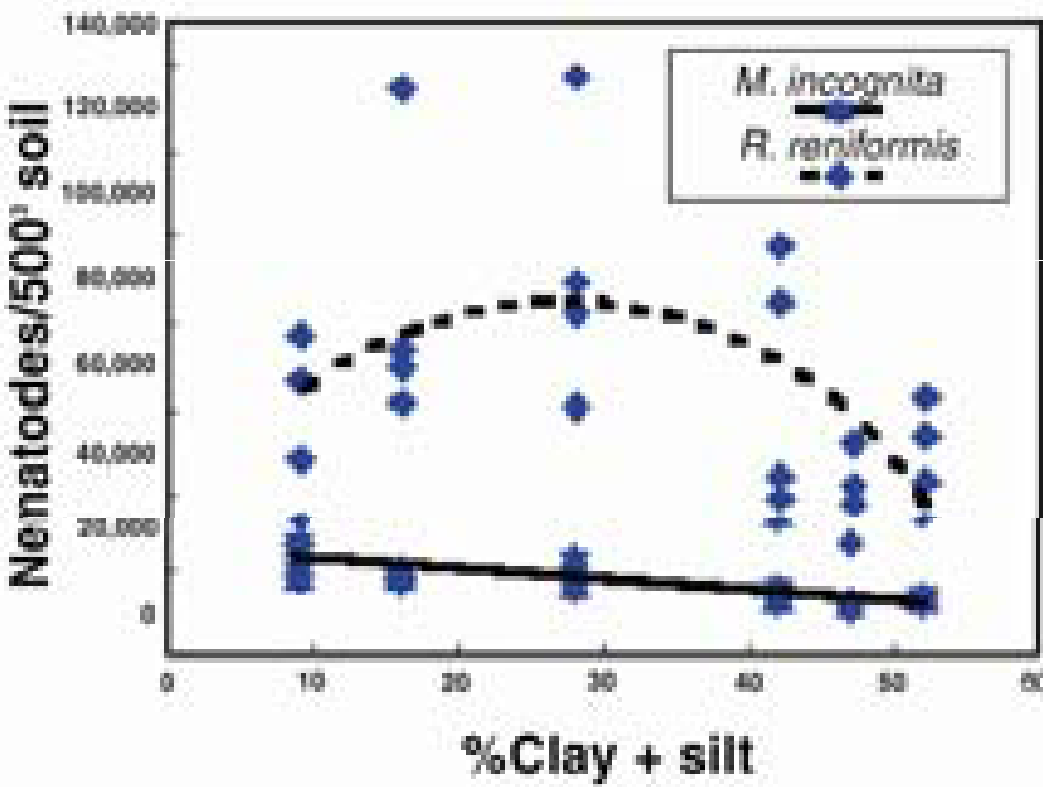




Fonte Guilherme Asmus

Textura Solo

R. reniformis x *M. incognita*



Ocorrência de Nematóides Fitoparasitos em Algodoeiro no Estado de Mato Grosso do Sul

GUILHERME LAFOURCADE ASMUS[1]

Tabela 2. Correlação de Pearson entre as densidades populacionais das espécies de nematóides fitoparasitos ao algodoeiro e as percentagens de areia, silte e argila das amostras.

	AREIA	SILTE	ARGILA
Meloidogyne incognita	r = 0.26 p < 0,01	r = 0,04 p = 0,31	r = - 0,31 p < 0,01
Rotylenchulus reniformis	r = - 0,06 p = 0,21	r = 0,00 p = 0,47	r = 0,07 p = 0,18
Pratylenchus brachyurus	r = 0,07 p = 0,16	r = 0,02 p = 0,40	r = - 0,09 p = 0,11

Controle de *Rotylenchulus reniformis* em Algodoeiro

SCENARIO 1: LOW TO MODERATE NEMATODE PROBLEM IS VERIFIED OR SUSPECTED.

Use seed treated with one of the seed treatment packages listed above. There is evidence that these material. can suppress nematode infection for a couple of weeks . if the pressure is not high. If root-knot is the issue, the use of a seed treatment on the only moderately resistant cultivar currently available (Phytogen 367 WNR) may improve nematode control. There are no reniform nematode resistant cultivars.

SCENARIO 2. MODERATE TO HIGH NEMATODE PRESSURE; HISTORICALLY HANDLED WITH 5 to 7 LB/A TEMIK.

Use a nematicide seed treatment and apply Vydate C-LV according to the label at or preferably shortly before pinhead square. Again, if root-knot is the problem, consider the resistant cultivar plus these treatments.

SCENARIO 3. SEVERE NEMATODE PRESSURE; FIELD WAS A "PROBLEM FIELD" LAST YEAR.

- Option 1: Rotate to something else.
- Option 2: Apply one of the soil fumigants.

Nematodes can be managed, but the good old days of applying Temik in-furrow at planting as the only nematode control strategy are over. Now, growers are going to have to use the same approach and concept that they are already using for their weed and insect control. They need to know where the problem exists, what nematode is involved, and how severe the problem is.

Growers (or their consultants) have been scouting fields for years to determine these three things for insects and weeds. We need to do the same for nematodes... the only catch is that nematodes are invisible so the scouting has to be done with a soil probe and bucket in the fall in preparation for next year's crop.

For more information about nematode management in cotton, look to these fact sheet publications prepared by the University of Arkansas Division of Agriculture.

http://www.thecropsite.com/news/7900/managing-cotton-nematodes-without-temik/

Problemas pequenos a moderados

1) Tratamento de sementes
2) + Cultivares resistentes

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Pressão moderada a alta

TS + Vydate + Cultivares resistentes

http://www.thecropsite.com/news/7900/managing-cotton-nematodes-without-temik/

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Pressão severa do nematoide

1) Rotação, ou
2) Nematicida fumigante

http://www.thecropsite.com/news/7900/managing-cotton-nematodes-without-temik/

Nematicidas Sintéticos

Tratamento de Sementes / Sulco

Consulta 26 agosto 2020

SOC. BRASIL. NEMAT.
Public. nº 5, 1981

CONTROLE QUÍMICO DE *Rotylenchulus reniformis* EM ALGODOEIRO

Antonio Marco Brancalion [1]
Luiz Gonzaga E. Lordello [2]

Quadro I - Efeito de diversos tratamentos sobre a altura média e produção do algodoeiro. São João da Boa Vista - São Paulo

TRATAMENTOS	PRODUTOS	DOSAGENS i.a./ha	TIPO DE APLICAÇÃO	ALTURA MÉDIA DAS PLANTAS (cm) 68 dias	ALTURA MÉDIA DAS PLANTAS (cm) 103 dias	PRODUÇÃO kg/18m²
A	Carbofuran (FURADAN 5G)	1,25kg	sulco de plantio	39,50ab	71,33a	2,889ab
B	Carbofuran (FURADAN 5G)	2,50kg	sulco de plantio	41,65a	71,15a	3,124a
C	Aldicarb (TEMIK 10G)	2,00kg	sulco de plantio	41,40a	71,00a	2,760ab
D	Carbofuran (FURADAN 350F)	1,00kg	trat. de semente	38,67ab	71,10a	2,573ab
E	TESTEMUNHA	-	-	33,27 b	61,52 b	2,213 b
D.M.S.	(0,05)			6,24	8,33	0,71
	(0,01)			7,80	10,42	0,89
Coeficiente de variação				9,29%	6,97%	15,14%

Nematicida Biológico
Tratamento de Sementes

Consulta 26 agosto 2020

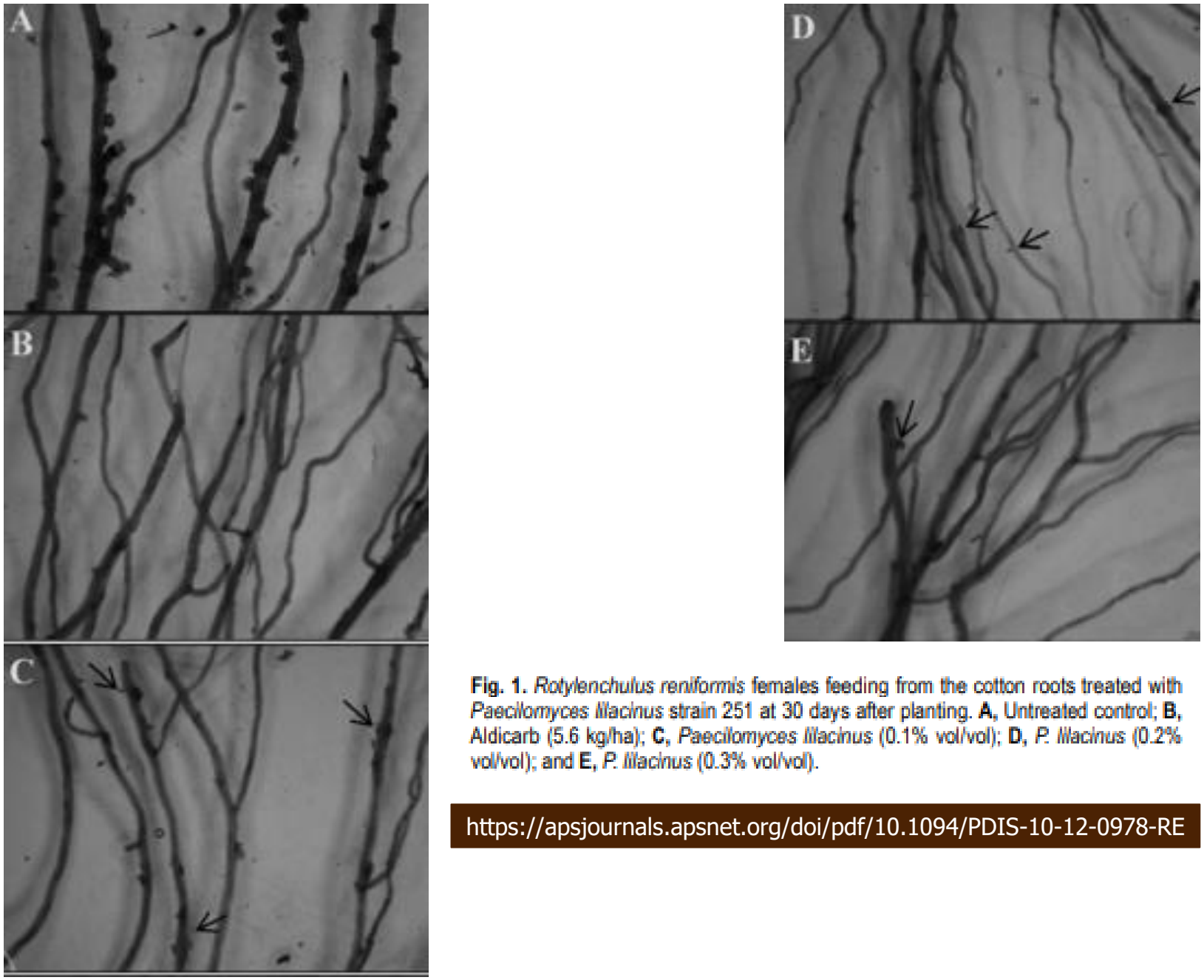


Fig. 1. *Rotylenchulus reniformis* females feeding from the cotton roots treated with *Paecilomyces lilacinus* strain 251 at 30 days after planting. **A,** Untreated control; **B,** Aldicarb (5.6 kg/ha); **C,** *Paecilomyces lilacinus* (0.1% vol/vol); **D,** *P. lilacinus* (0.2% vol/vol); and **E,** *P. lilacinus* (0.3% vol/vol).

https://apsjournals.apsnet.org/doi/pdf/10.1094/PDIS-10-12-0978-RE

LONREN UPLAND COTTON GERMPLASM RESPONSE TO *ROTYLENCHULUS RENIFORMIS* INOCULUM LEVEL

Sikkens, R. B.[1], D. B.Weaver*[1], K. S. Lawrence[2], S. R. Moore[2], and E. van Santen[1]

[1]Auburn University Department of Agronomy and Soils, Auburn, AL 36849-5412 USA. [2]Auburn University Department of Entomology and Plant Pathology, Auburn, AL 36849-5413 USA. *Corresponding author: weavedb@auburn.edu

Fig. 1. Representative line-up of reniform nematode resistant LONREN-2 seedlings at various inoculum levels. Plants were photographed upon completion of two days of nematode extraction. Note the reduction in root volume and stunted shoots at higher inoculum levels.

Fig. 2. Representative line-up of reniform nematode susceptible FM966 seedlings at various inoculum levels. Plants were photographed after being positioned for two days on funnels for nematode extraction. Note the increased root biomass at higher inoculum levels.

Fibermax-966	DeltaOpal

Coodetec-406	Fibermax-966	Fibermax-977

Cultivar	mo / g
DeltaOpal	8,1
Makina	10,9
Fibermax-977	12,9
Fibermax-966	14,0
FMT-701	16,4
Coodetec-401	39,9

Almeida et al., 2007

Cultivar	Nem/g	kg/ha
DeltaOpal	29,6	1.082 c
Makina	-	-
Fibermax-977	37,3	1.344 a
Fibermax-966	38,7	1.078 c
FMT-701	63,2	1.341 a
Coodetec-401	-	-

Asmus & Lamas, 2007

Rotação de Cultura

Algodão
Soja Resistente e Suscetível
Milho
Braquiária

Fotos Guilherme Asmus

1 Ano *x* 2 Anos

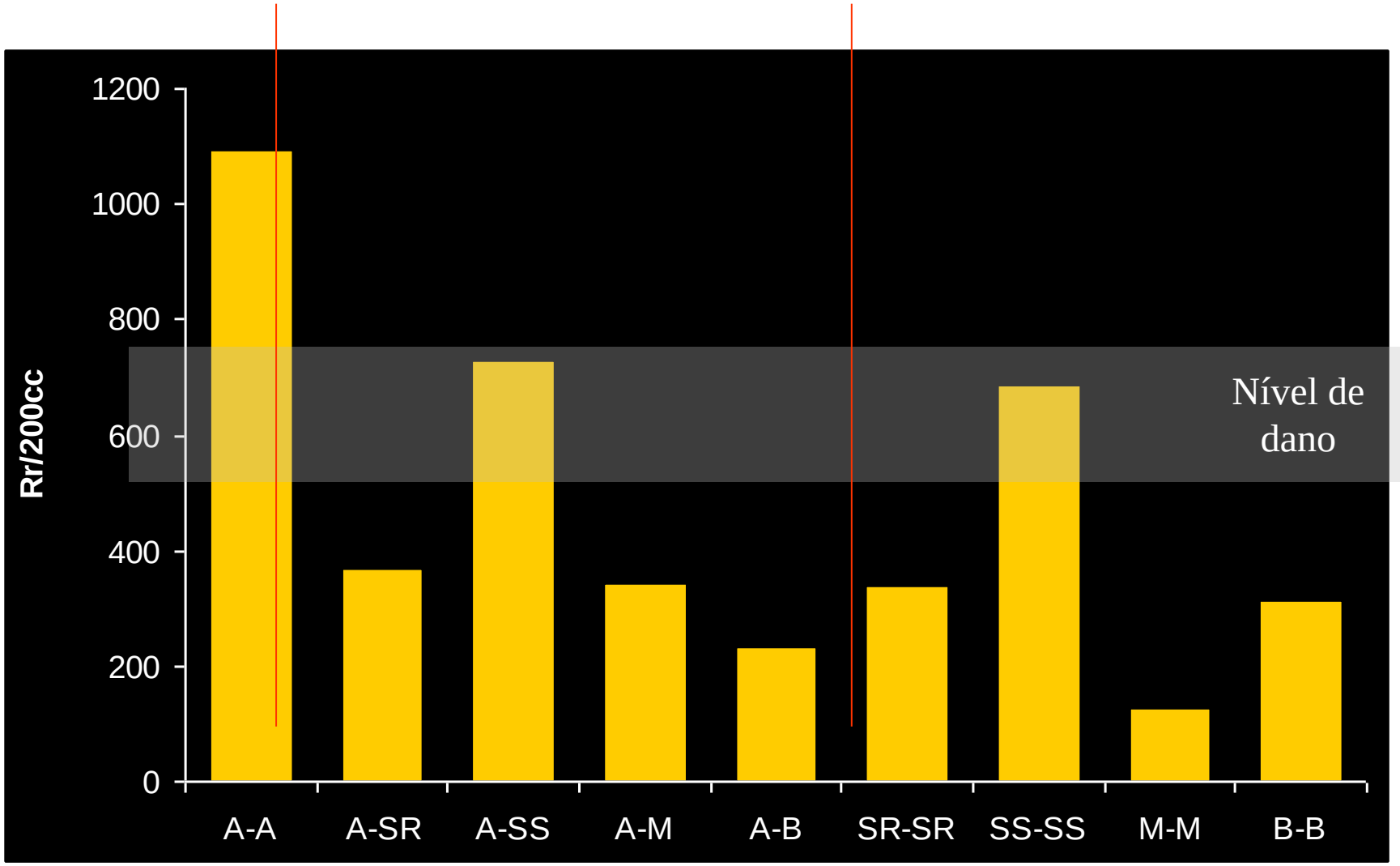
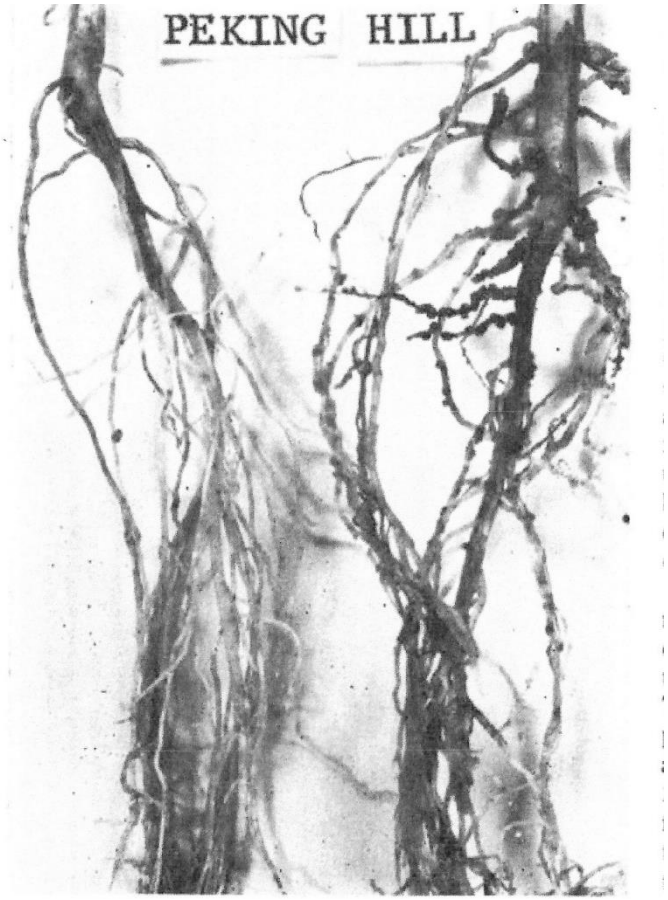

1200
1000
800
600
400
200
0
Rr/200cc
Nível de dano
A-A
A-SR
A-SS
A-M
A-B
SR-SR
SS-SS
M-M
B-B

Foto Guilherme Asmus

Rotação com Soja Resistente



https://www.apsnet.org/publications/phytopathology/backissues/Documents/1970Articles/Phyto60n04_695.PDF

Rotação com Soja Resistente

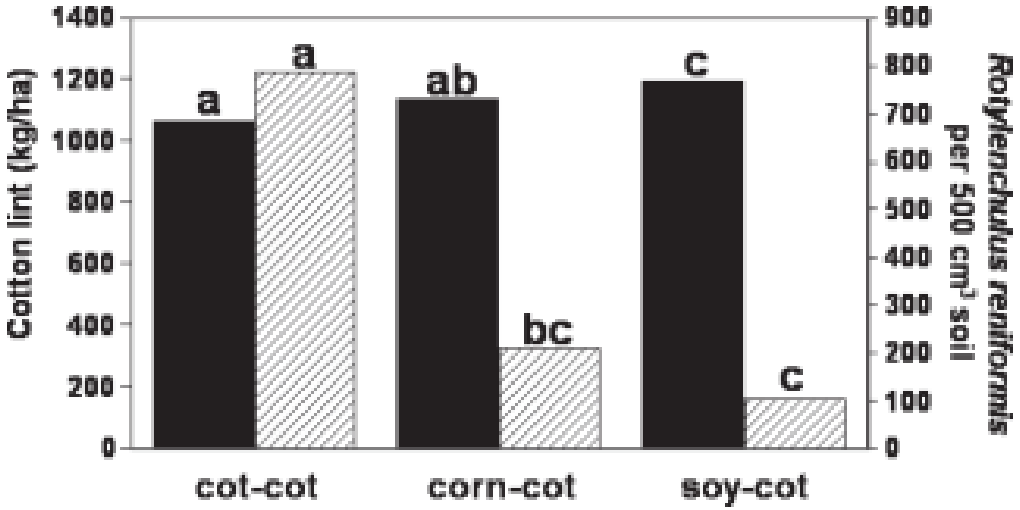
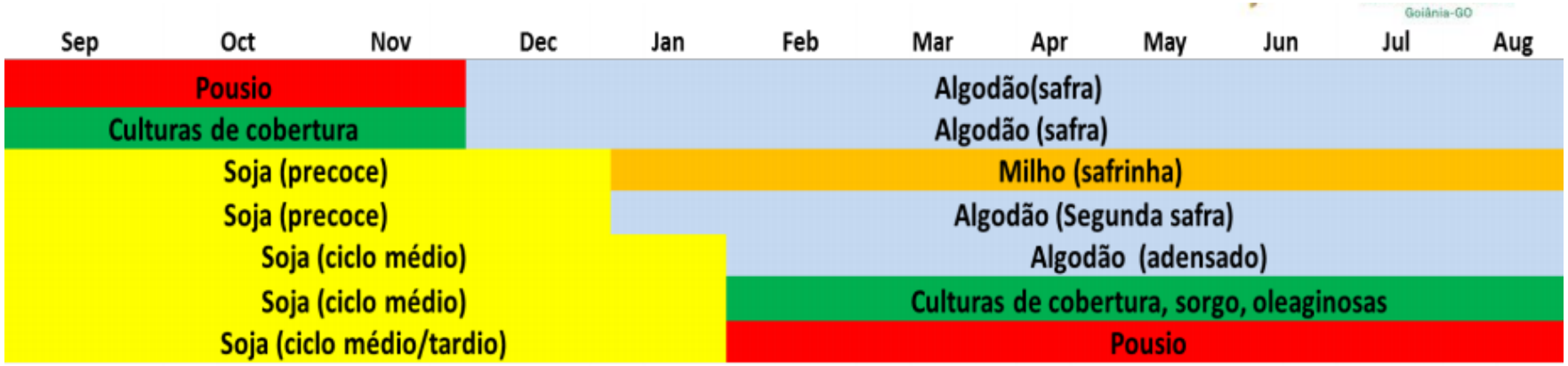
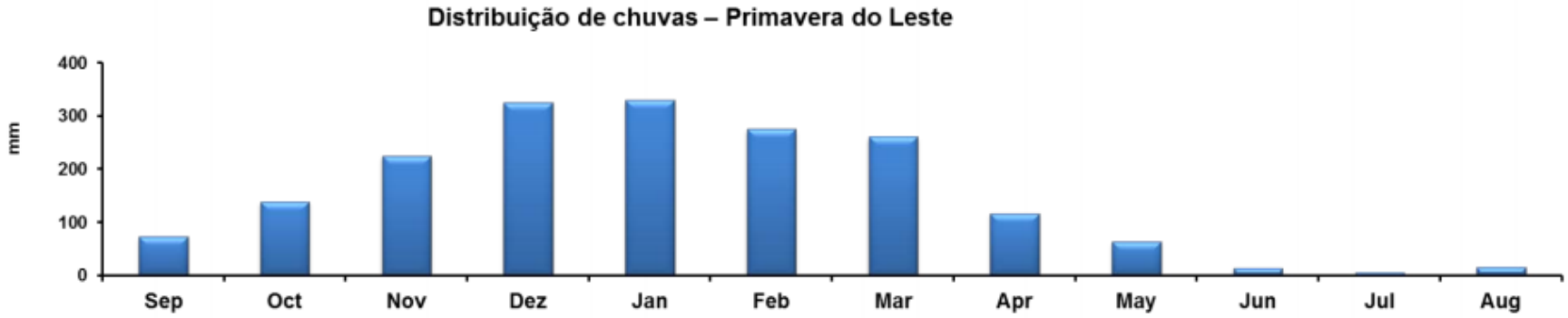


FIG. 1. Effects of rotation with a soybean cultivar resistant to *Rotylenchulus reniformis*, (soy-cot), non-host corn (corn-cot), or continuous cotton (cot-cot) on cotton lint yield and initial population densities of *R. reniformis* (Davis et al., 2003).

https://www.researchgate.net/publication/24175623_The_Future_of_Nematode_Management_in_Cotton

Sucessões Mato Grosso





Jean L. Belot

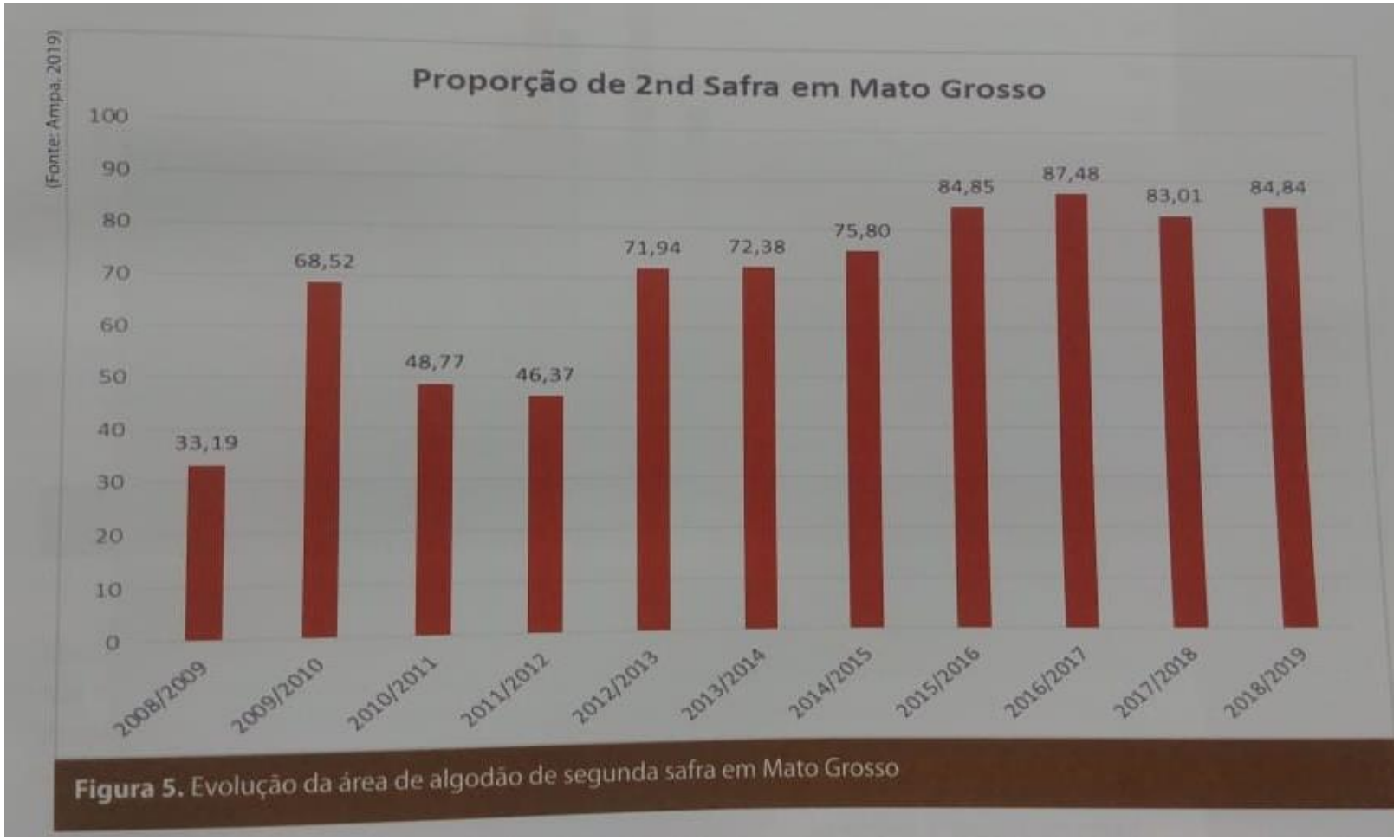


Figura 5. Evolução da área de algodão de segunda safra em Mato Grosso

Galbieri (2020) / Mato Grosso

Sucessão para o Controle de *R. reniformis* em Algodoeiro

Aral Moreira (MS)

Cultura sequeiro

R. reniformis é o principal fator limitante

Foto Guilherme Asmus

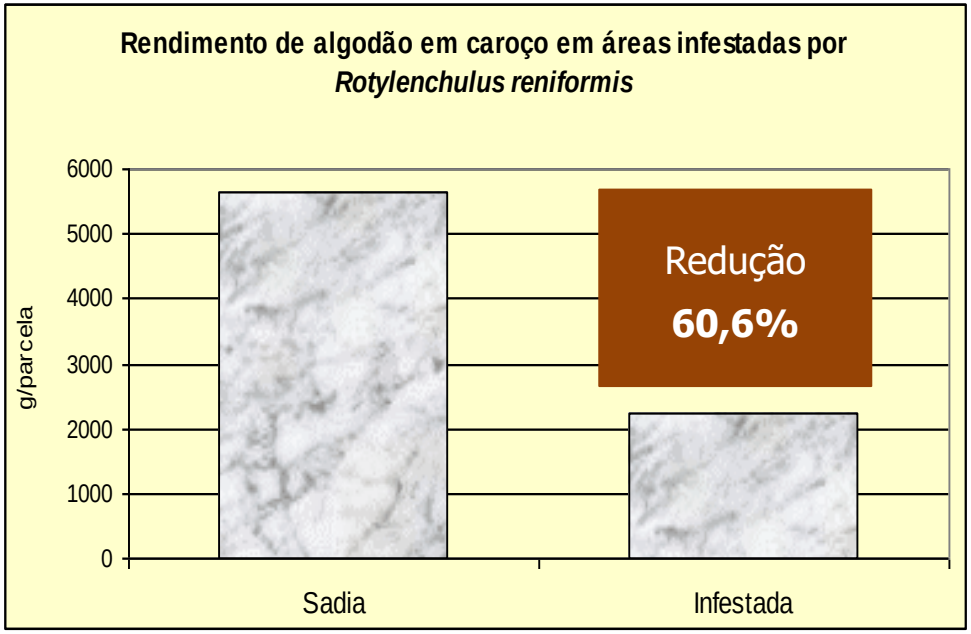


TABLE 1 - Reproduction factor (RF)[1] of *Rotylenchulus reniformis* on cover crops under greenhouse conditions

Cover crop	Experiment 1	Experiment 2
Soybean 'BR 96-25619	-	16.50 a
Grain amaranth 'BRS Alegria'	6.68 a	-
Quinoa 'BRS Piabiru '	4.59 b	-
Quinoa 'Common'	3.89 c	-
French marigold	0.79 d	0.31 b
Mulato grass	-	0.09 c
Tef	0.67 d	-
Oil radish 'Siletina'	0.21 e	0.13 bc
Forage sorghum 'Santa Elisa 38'	0.14 e	0.08 c
Forage sorghum 'IPA 7301011'	0.12 e	-
Foxtail millet	0.12 e	-
Black oat 'Embrapa 29'	-	0.04 c
Black oat 'Embrapa 140'	0.12 e	-
Black oat 'Common'	0.10 e	-
Algerian oat 'São Carlos'	-	0.04 c
Pearl millet 'BRS 1501'	0.09 e	0.02 c
Finger millet 'Agronorte'	0.08 e	-
CV(%)	33,31	30,68

[1]RF = Final (Pf)/Initial (Pi) population; Pi = 1,216 nematodes/plant (experiment 1) and 1,000 nematodes/plant (experiment 2)
Means are average of eight (experiment 1) or six (experiment 2) replications. Data followed by the same letter were not different according to LSD test at P = 0.05 based on log (x+1) transformed values.

Asmus et al. (2008)

TABLE 2 - Soil and cotton root populations[1] of *Rotylenchulus reniformis* (Rr) before and after cultivation of selected cover crops during the winter

Cover crop	P1 Rr/200 cm^3	P2 Rr/200 cm^3	RFC (P2/P1)	P3 Rr/g root[z]
Forage sorghum	2,462 ab	960 ab	0.39 b	266 ab
Pearl millet	1,800 b	1,422 ab	0.79 ab	678 a
Oil radish	2,330 ab	766 b	0.33 b	-
Mulato grass	3,068 a	1,182 ab	0.38 b	166 b
Clean fallow	2,114 b	1,818 a	0.86 a	771 a
C.V. (%)	5.19	13.48	71.35	13.81

[1]P1 = 29 April 2004 (cover crops sowing); P2 = 9 November 2004 (cotton sowing); P3 = 11 January 2005 (cotton flowering); RFC = reproduction factor of the nematode after cover crops (P2/P1).
Means are average of five replications. Data followed by the same letter were not different according to LSD test at P = 0.05 based on log (x+1) transformed values.

Asmus et al. (2008)

TABLE 3 - Seed and fiber cotton yields, fiber percentage and cotton boll weight after selected cover cropping in a site naturally infested by *Rotylenchulus reniformis*

Cover crop	Seed cotton (kg.ha^{-1})	Cotton fiber (kg.ha^{-1})	Fiber (%)	Boll weight (g)
Forage sorghum	2,031[z] ab	1,076 ab	52.72 a	5.49 a
Pearl millet	1,931 bc	924 bc	47.87 bc	5.23 bc
Mulato grass	2,294 a	1,178 a	51.18 ab	5.40 ab
Clean fallow	1,657 c	751 c	44.96 c	5.12 c
C.V. (%)	18.43	24.28	10.91	4.93

Means are average of five replications. Data followed by the same letter were not different according to LSD test at P = 0.05.

BOM FINAL DE SEMANA