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Diagnose, epidemiologia e controle

Edson Clodoveu Picinini
José Maurício Fernandes

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2003

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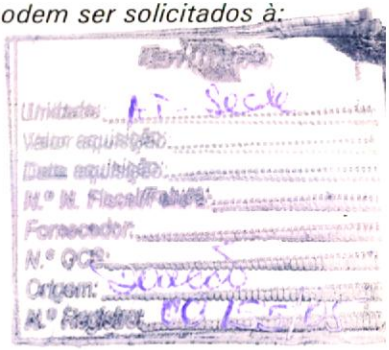

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APRESENTAÇÃO

Consegue-se avaliar o sucesso de uma publicação pela qualidade de seu texto. Também pela demanda que esta tem por seus leitores. O Manual de Identificação e Controle de Doenças da Cultura da Soja, é uma destas, além de ter uma forma extremamente inovadora, é de fácil uso e compreensão, já está na sua terceira edição e certamente exigirá outras.

A Embrapa Trigo tem orgulho de estar disponibilizando a seus clientes mais uma publicação que certamente, cumprirá a missão de melhorar a eficiência de .profissionais da área agronômica no exercício profissional, permitindo, desta forma que seus clientes, os produtores, possam ter mais eficácia no processo produtivo, diminuindo riscos e custos e consequentemente permitindo uma maior competitividade neste mercado que nosso país, finalmente, está assumindo a merecida liderança internacional

Benami Bacaltchuk
Chefe-Geral da Embrapa Trigo

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Sintomatologia da doença

Nome comum da doença

Binômio, em latim, da forma anamorfa

Binômio, em latim, da forma teleomorfa

Condições climáticas para o estabelecimento da doença

Aspectos epidemiológicos

Medidas de controle

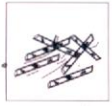
Intervalo de temperatura para o desenvolvimento do patógeno.

Duração em horas do molhamento foliar (água livre) ideal para o desenvolvimento do patógeno.

A ocorrência de precipitação pluvial no período favorece o estabelecimento do patógeno.

A água livre no solo favorece o fungo causador da doença.

O patógeno tem a habilidade de sobreviver no solo.



O patógeno tem a habilidade de sobreviver em restos culturais.

O patógeno é transmitido pela semente.

Existem vários hospedeiros para o patógeno.

Existe um único hospedeiros para o patógeno.

A doença é do tipo policíclica, e o número no interior do círculo indica o número de dias (d) para uma nova infecção.

A doença é do tipo monocíclica, ou seja, a infecção ocorre apenas uma única vez durante o ciclo da cultura.

Os propágulos do patógeno são disseminados pelos respingos da chuva.

Os insetos são agentes disseminadores da doença.

Os propágulos do patógeno são disseminados pelo vento a longas distâncias.

A distribuição da doença na lavoura ocorre de forma generalizada.

Doença distribuída na lavoura em forma de manchas ao acaso.

A compactação do solo favorece o desenvolvimento da doença.

O uso de sementes livres do patógeno é recomendado para o controle da doença.

Rotação de culturas com espécies não suscetíveis ao patógeno.

Existem cultivares com resistência genética à doença.

A resistência genética nas cultivares é parcial, devendo ser complementada com outras medidas de controle.

O enterrio dos restos culturais reduz a quantidade de inóculo primário.

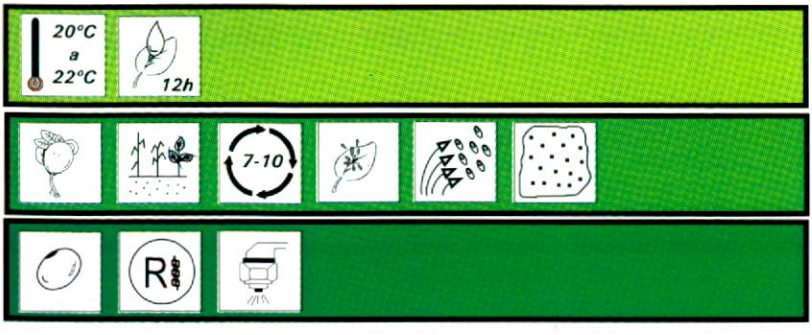
Existem produtos químicos eficientes no controle da doença.

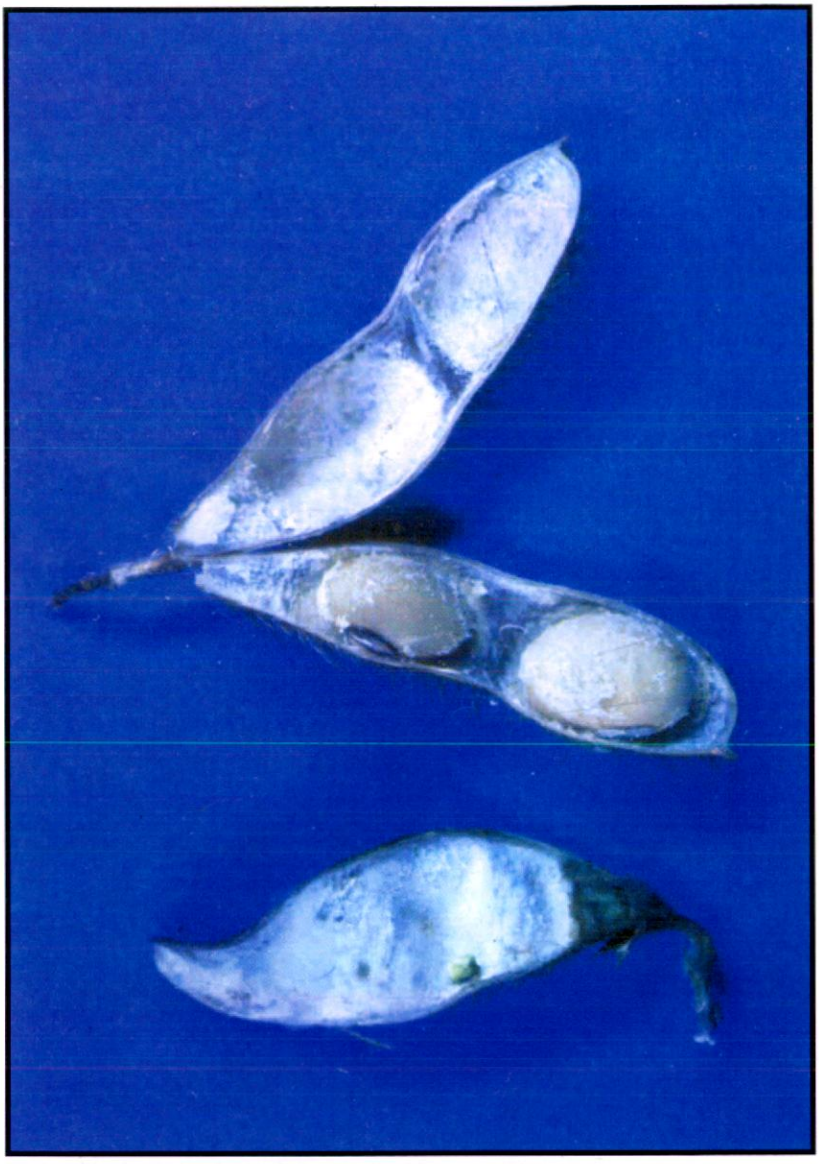
A descompactação do solo auxilia no controle da doença.

Controlando-se o vetor, a doença não se estabelece.

Evitar a lavração, pois essa prática dissemina ainda mais a doença no solo.

Míldio da soja (sintomas em vagens e em grãos)
Peronospora manshurica (Naum.) Syd. ex Gäum.





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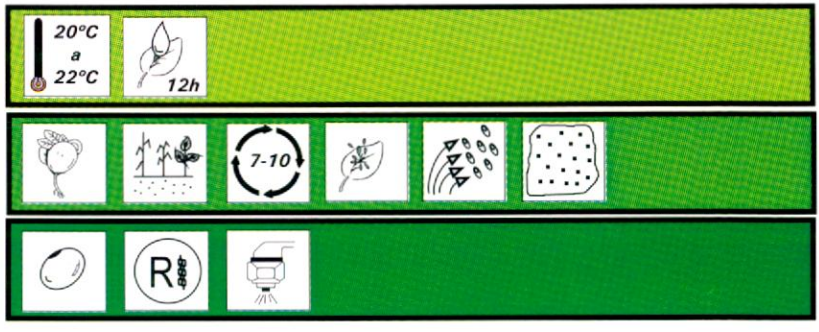
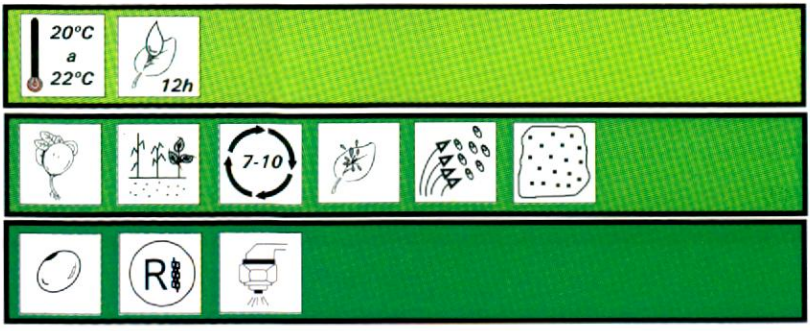
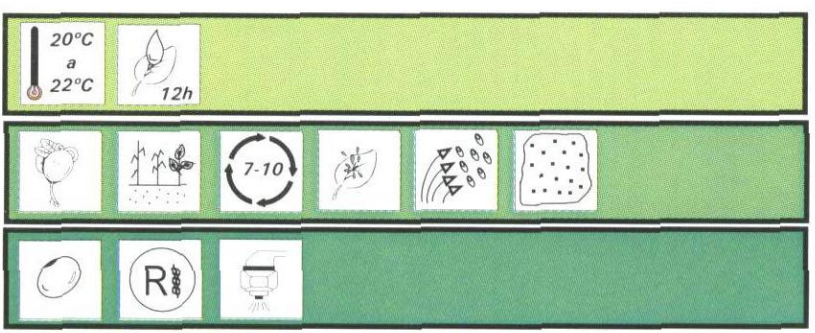


Míldio da soja (sintomas em campo)
Peronospora manshurica (Naum.) Syd. ex Gäum.



Míldio da soja (sintomas na face ventral da folha)
Peronospora manshurica (Naum.) Syd. ex Gäum.



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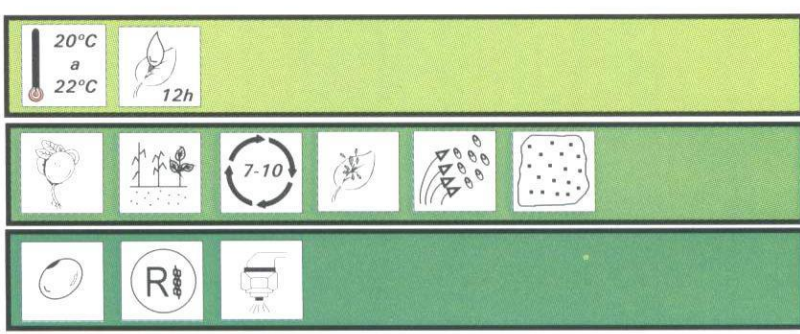
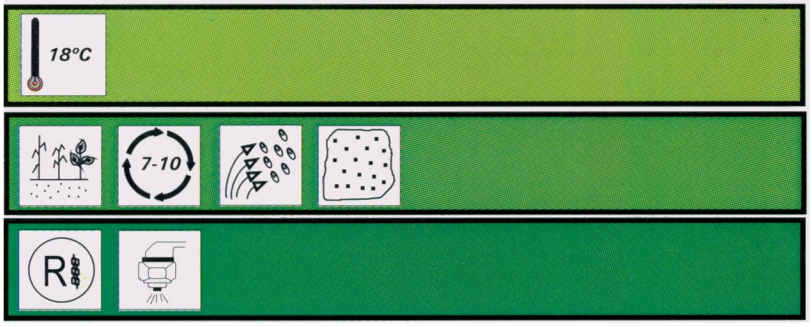
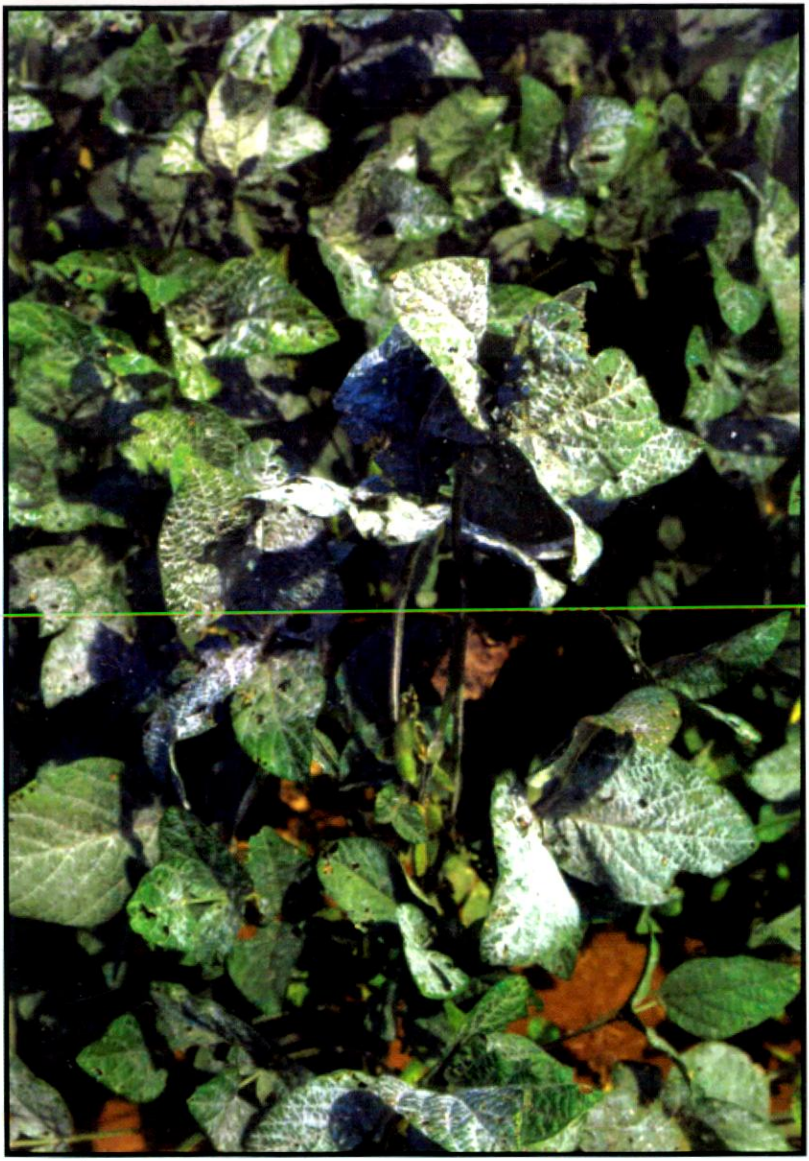
Peronospora manshurica (Naum.) Syd. ex Gäum.



Oídio da soja (sintomas em folhas)
Microsphaera diffusa Cke. & Pk.





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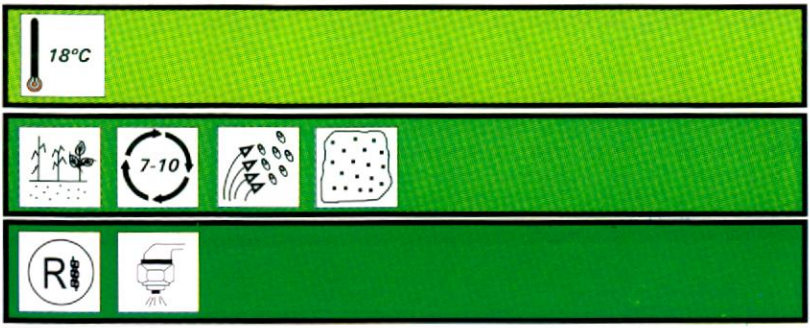

Oídio da soja (sintoma em plantas)
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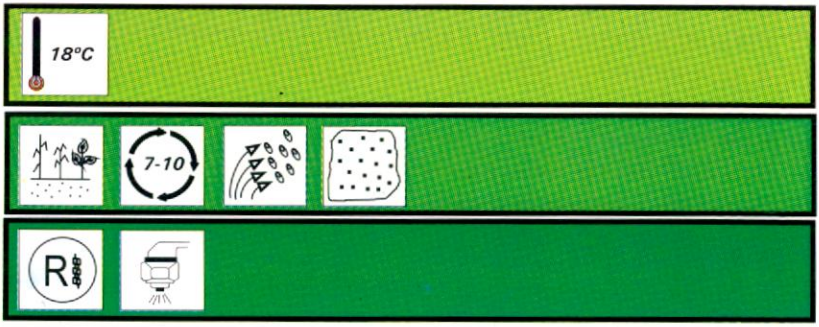
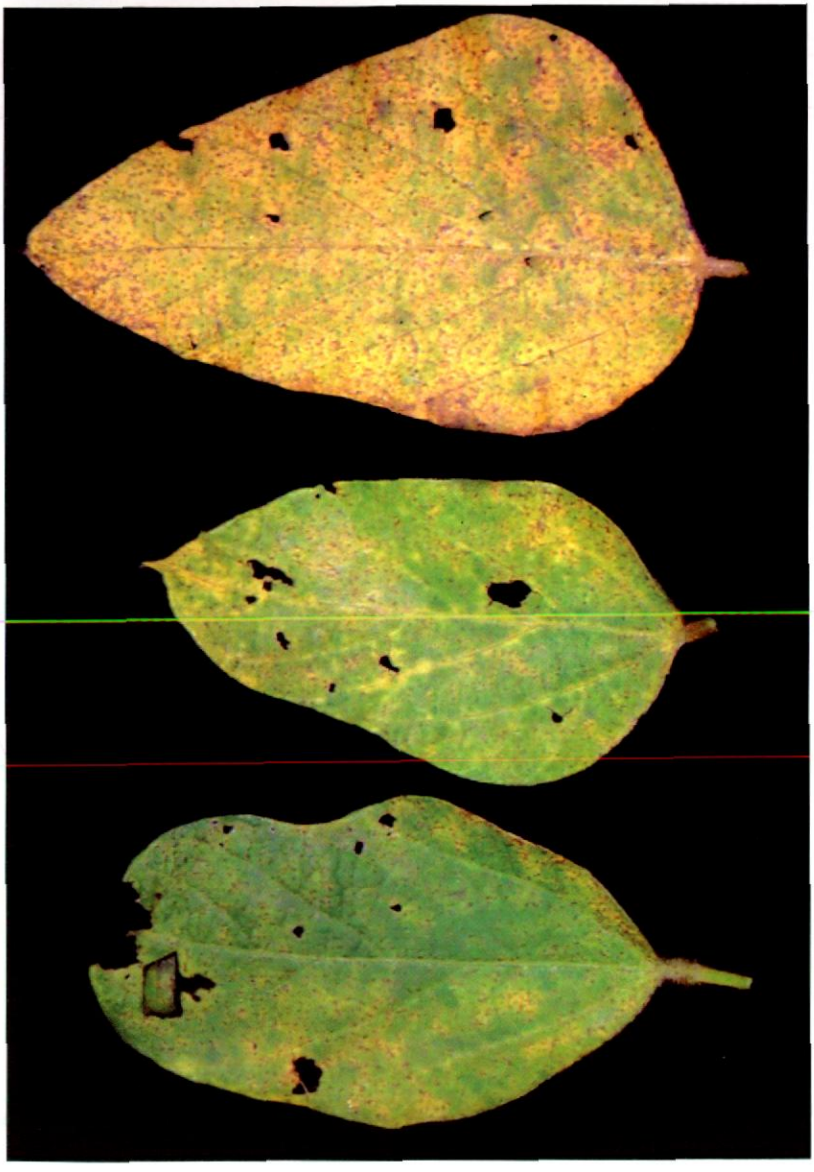
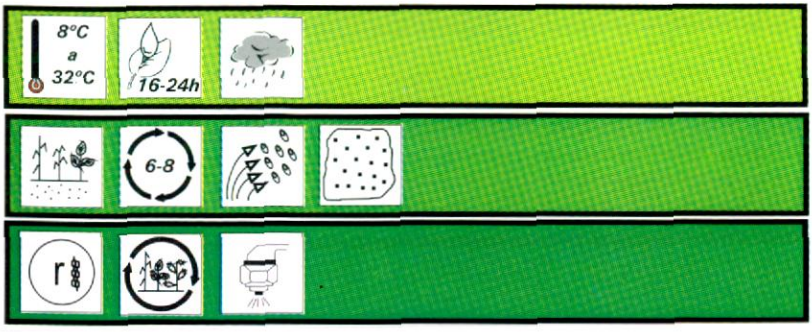
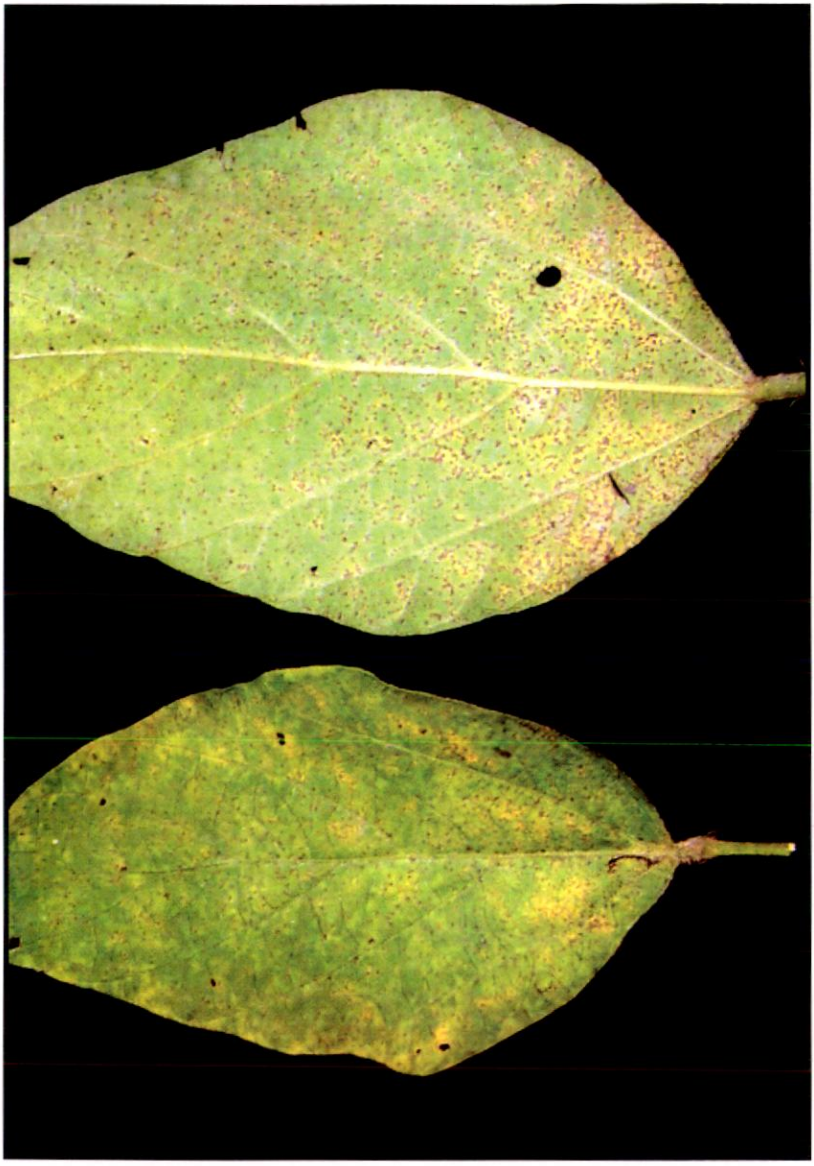




Ferrugem asiática (sintomas em folhas)
Phakopsora pachyrhizi H. Syd. & P. Syd.





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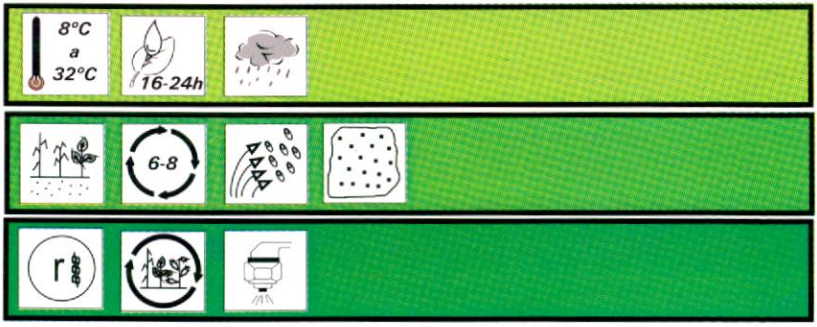

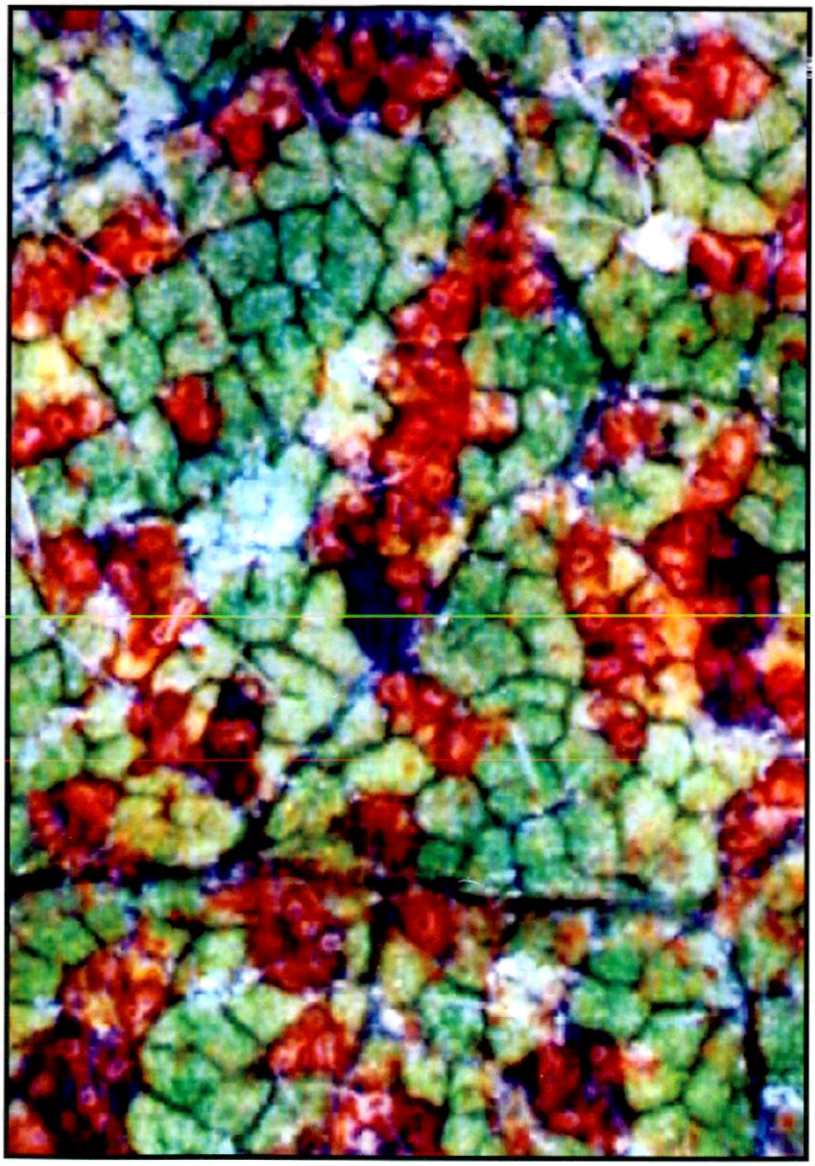

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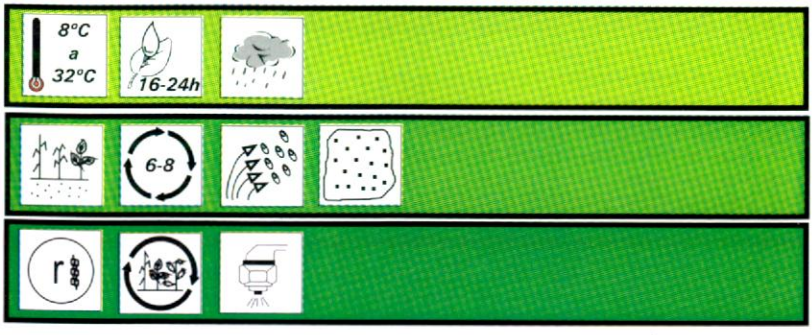

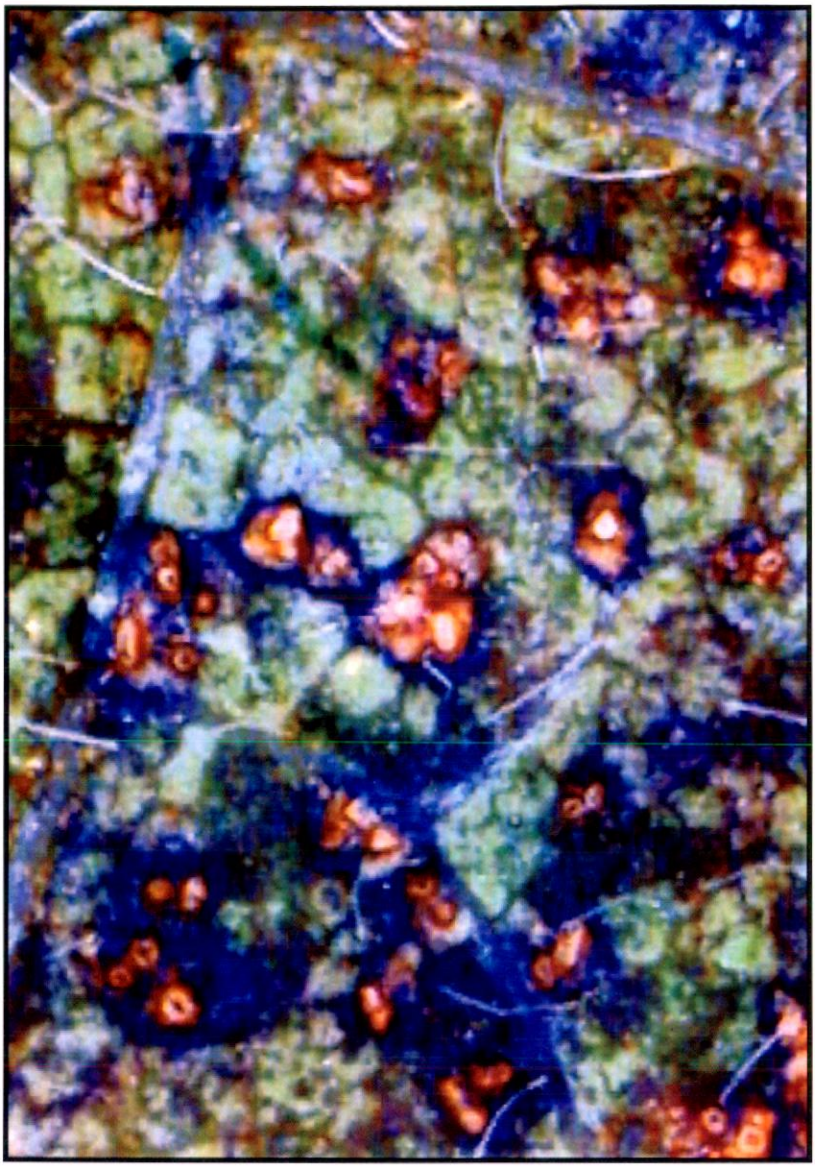

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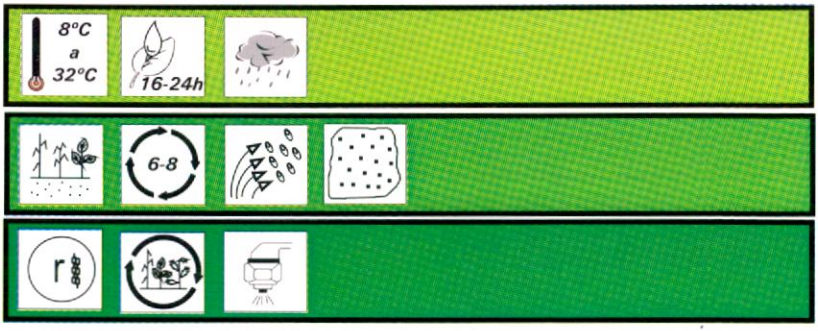
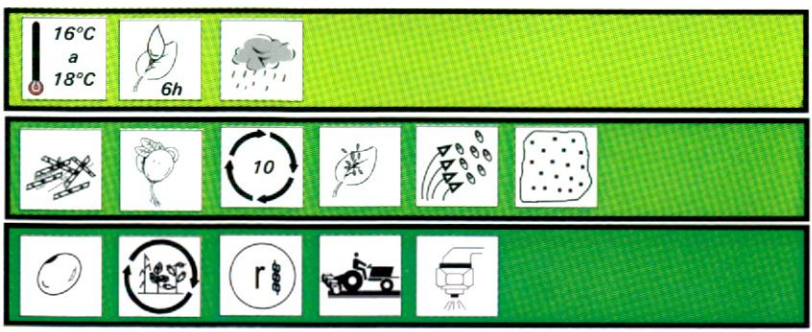


Mancha parda da folha (sintomas em folhas)
Septoria glycines Hemmi



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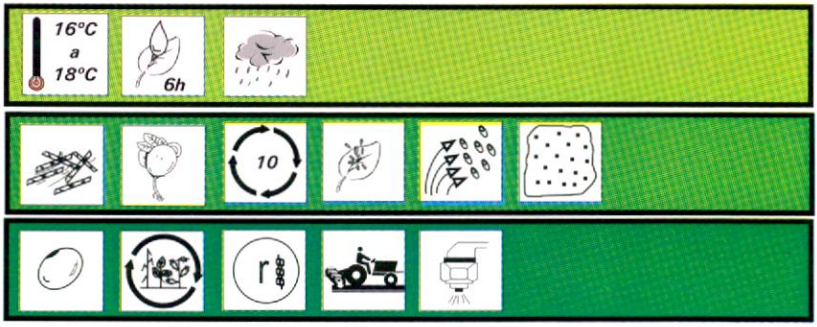

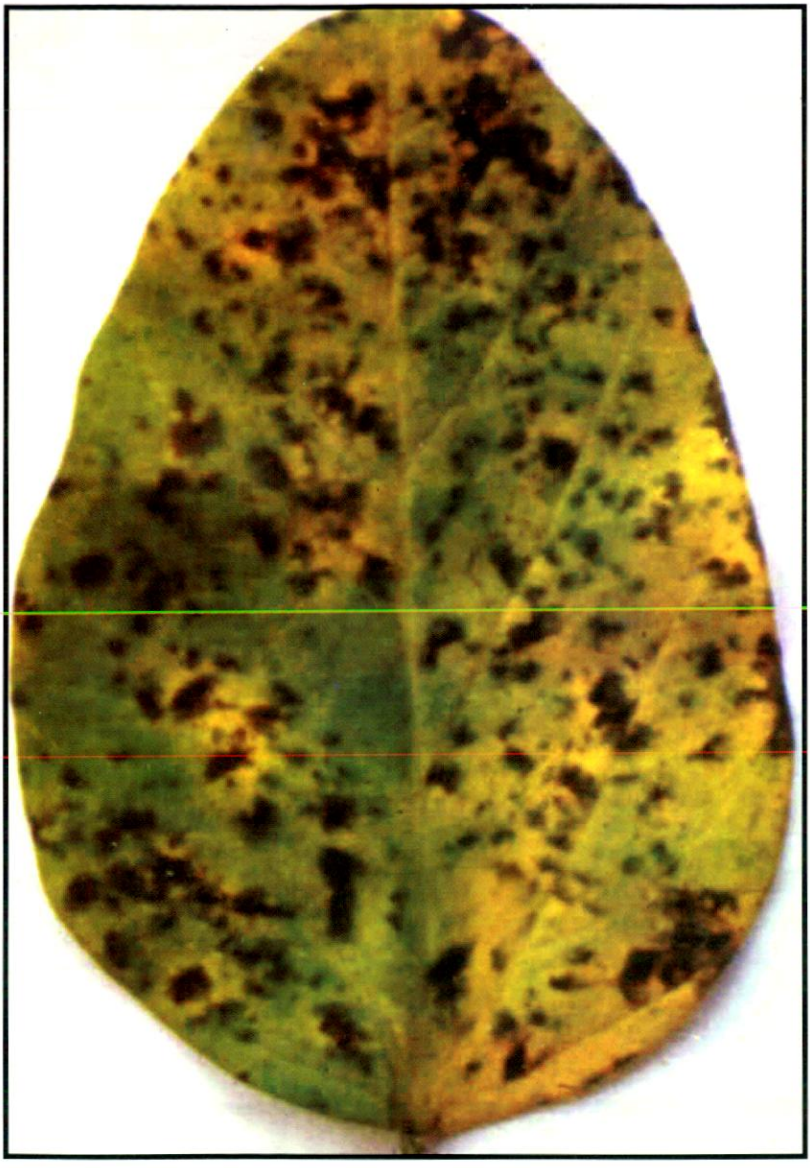

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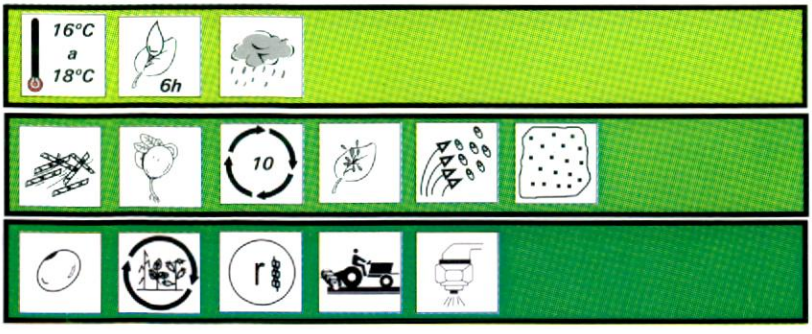

Mancha parda da folha (sintomas em lavoura)
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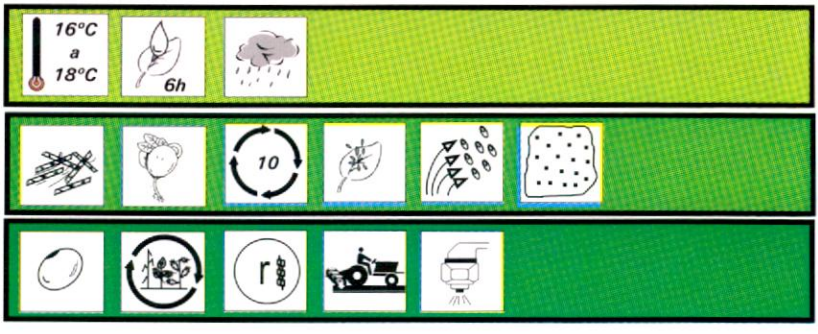
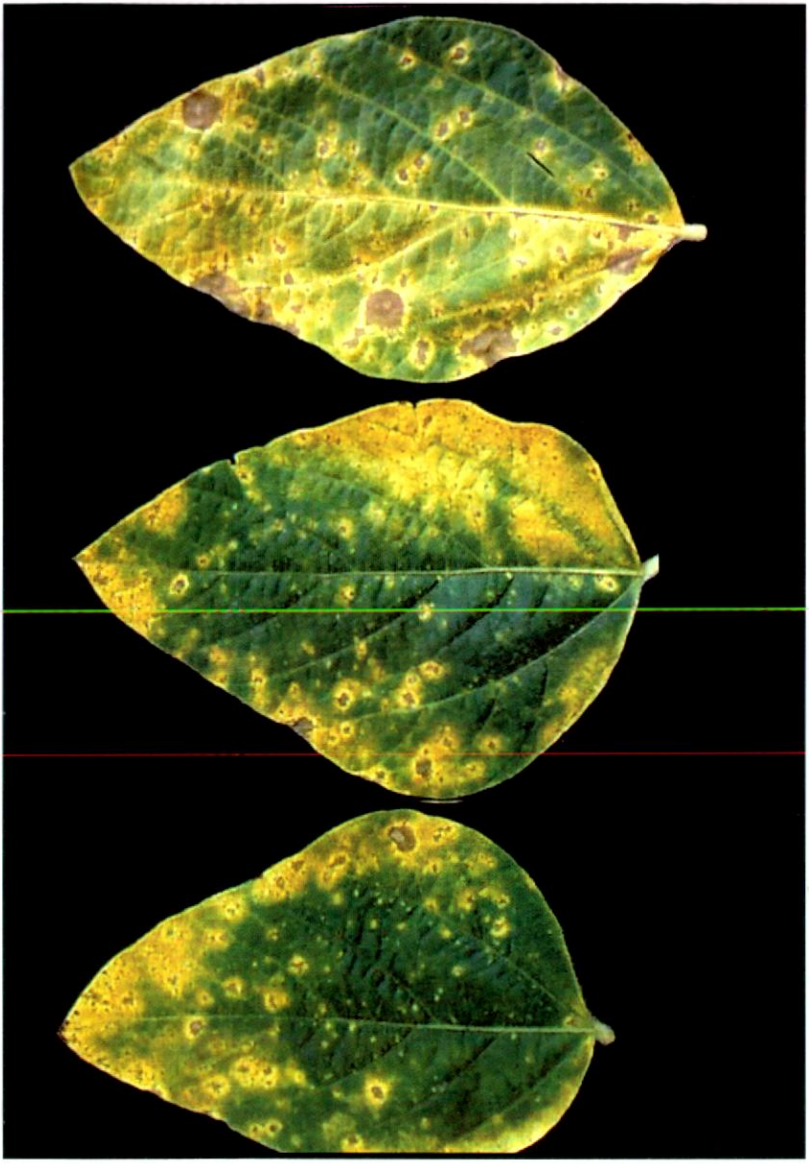
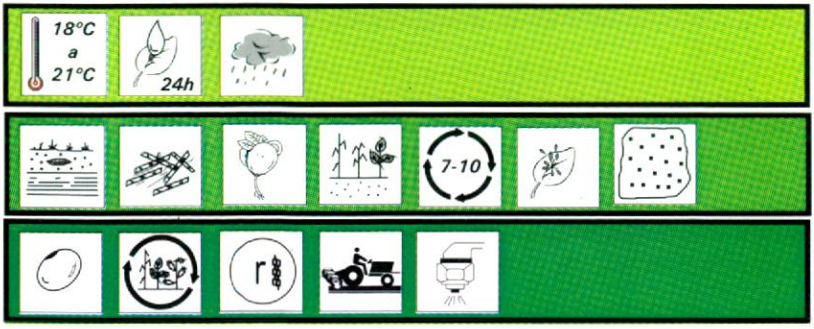




Mancha alvo (sintomas em folhas)
Corynespora cassiicola (Berk. & Curt.) Curt. Wei



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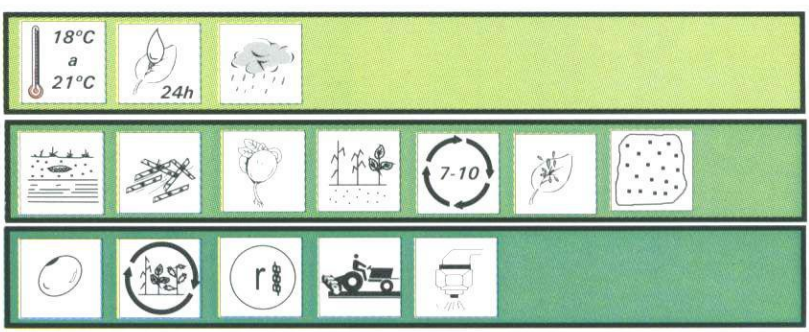
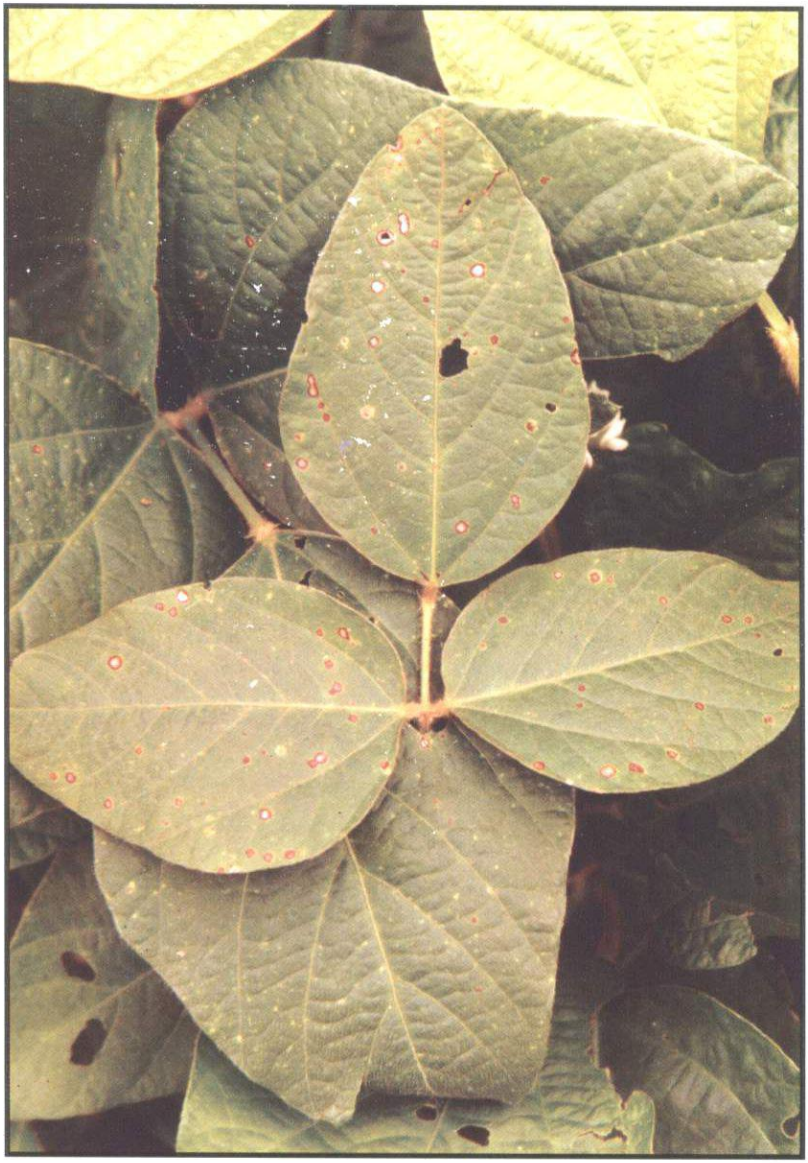
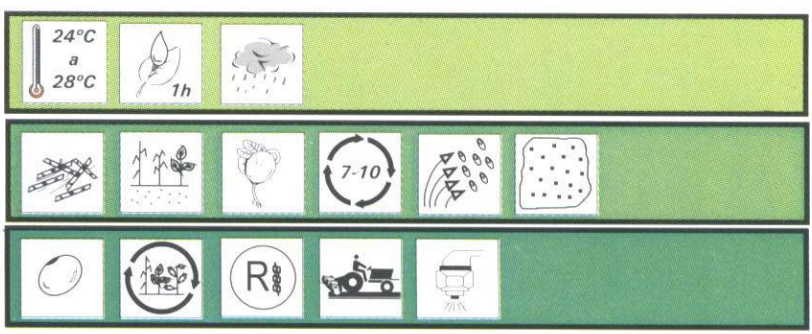




Mancha olho-de-rã (sintomas em folhas)
Cercospora sojina Hara



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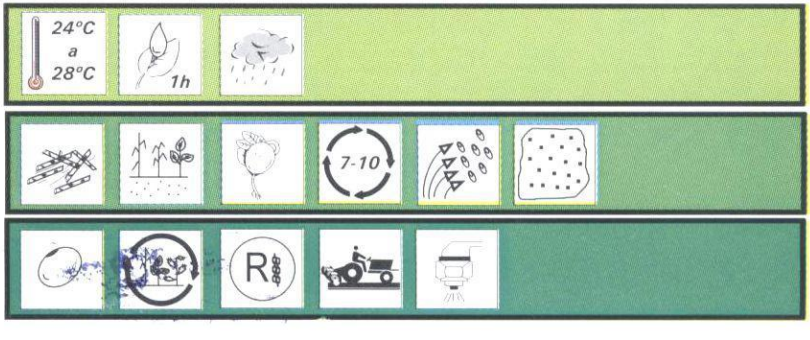
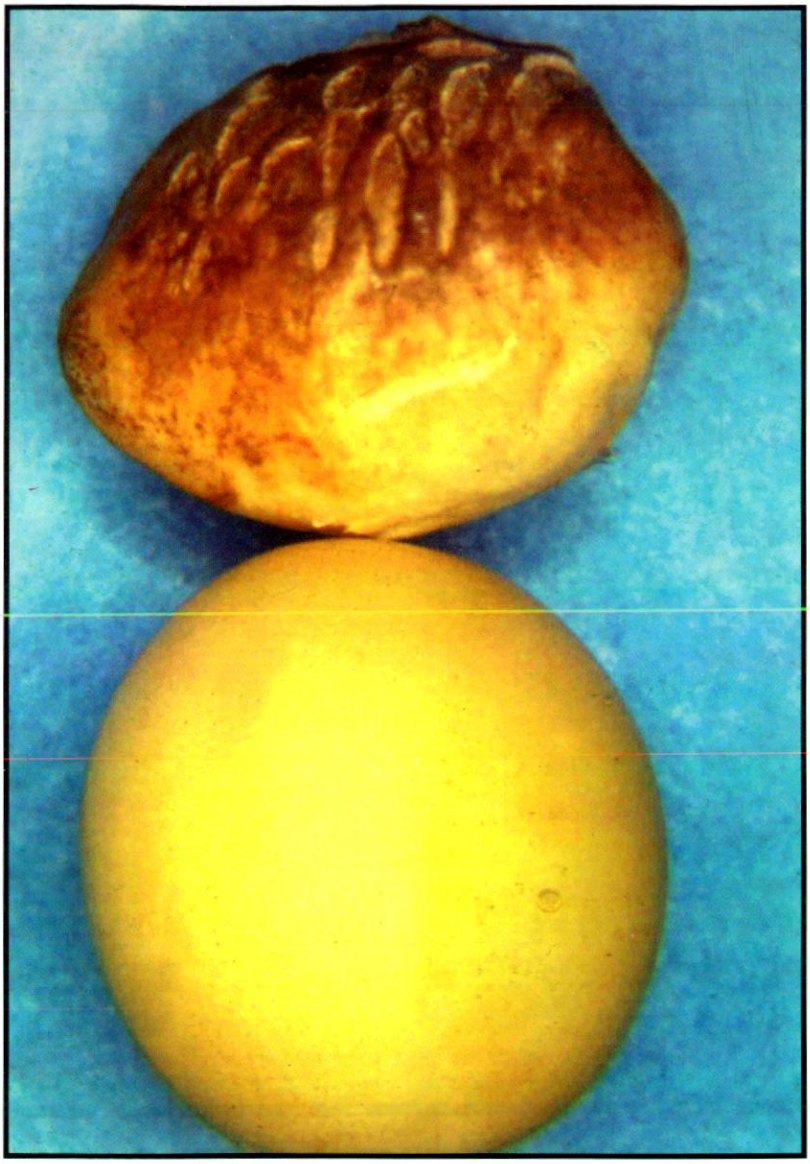
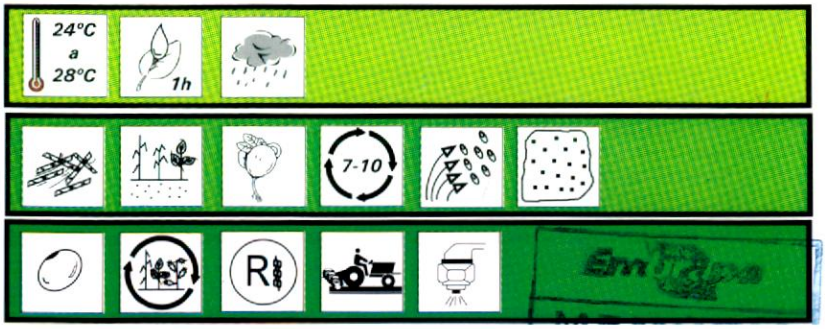
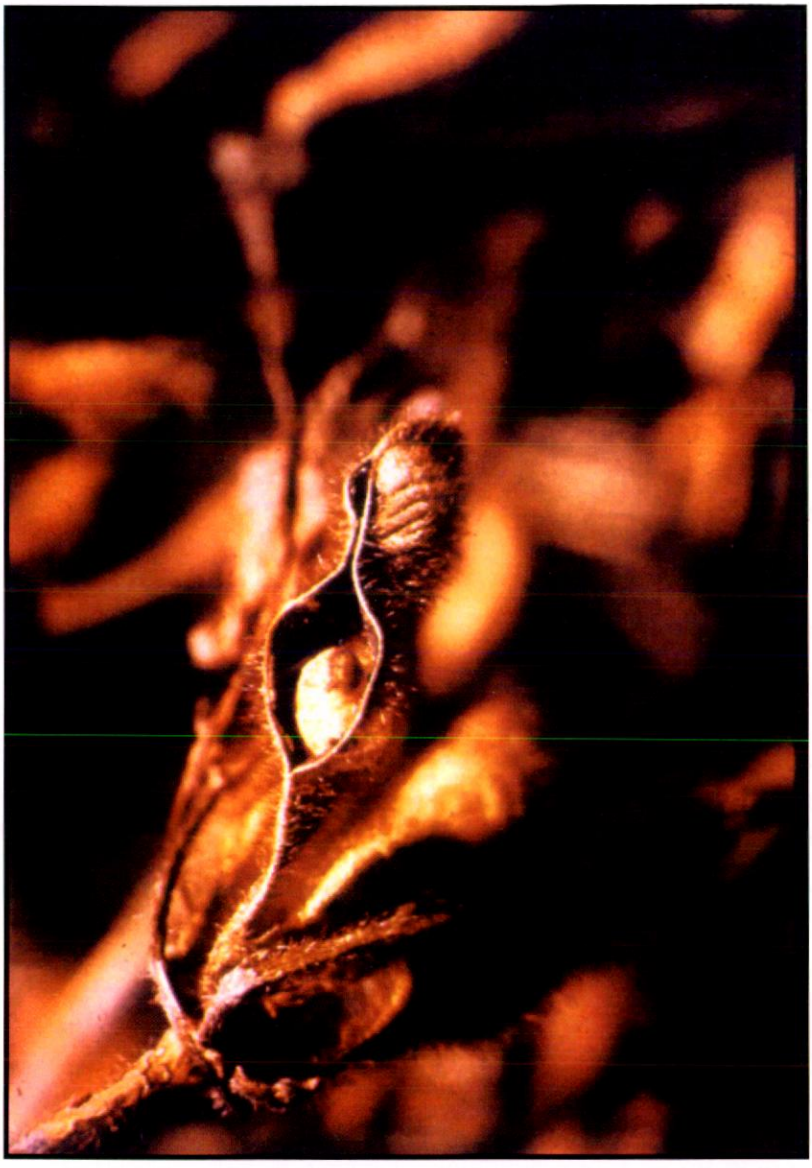


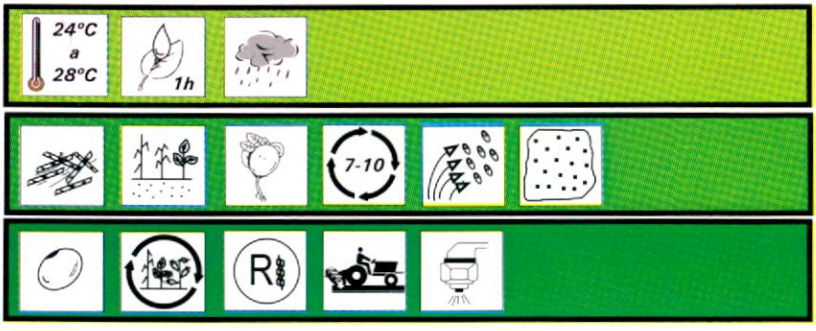


Mancha olho-de-rã (sintomas em grãos)
Cercospora sojina Hara

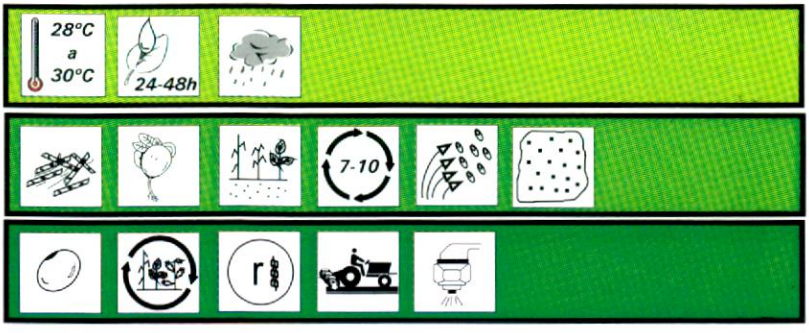




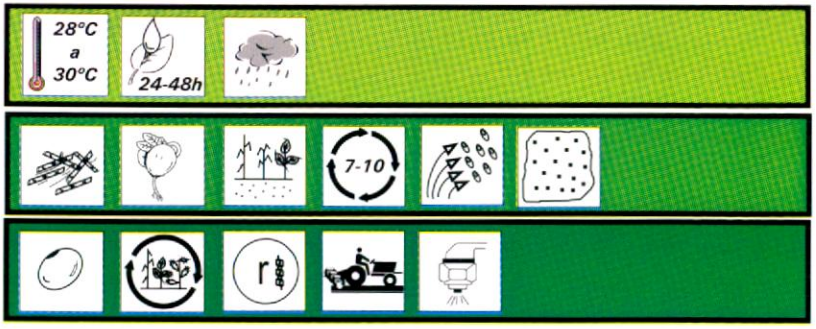
Mancha olho-de-rã (sintomas em hastes e em vagens)
Cercospora sojina Hara



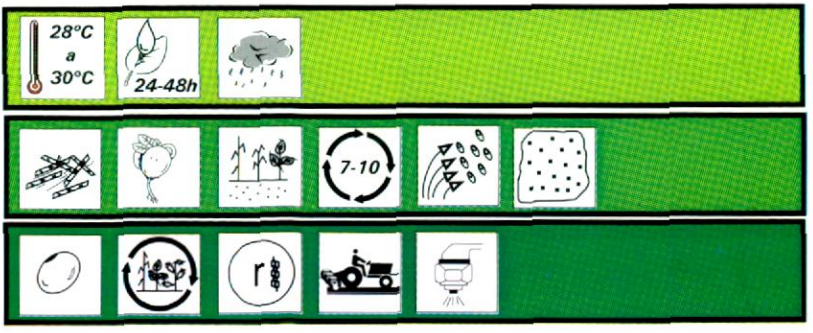
Mancha púrpura (sintomas em sementes)
Cercospora kikuchii (T. Matsu. & Tomoyasu) Gardner



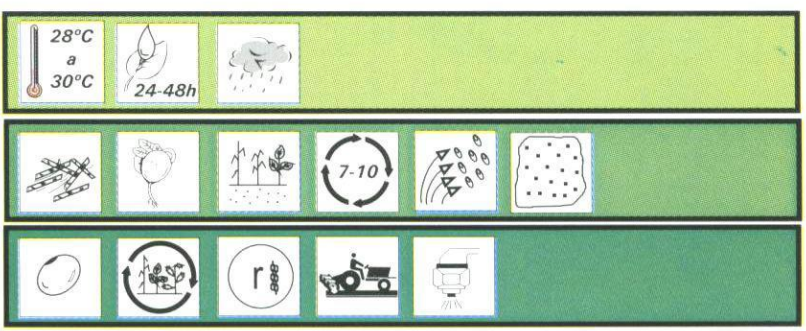
Mancha púrpura (sintomas em sementes)
Cercospora kikuchii (T. Matsu. & Tomoyasu) Gardner



Mancha púrpura (sintomas em hastes e em vagens)
Cercospora kikuchii (T. Matsu. & Tomoyasu) Gardner



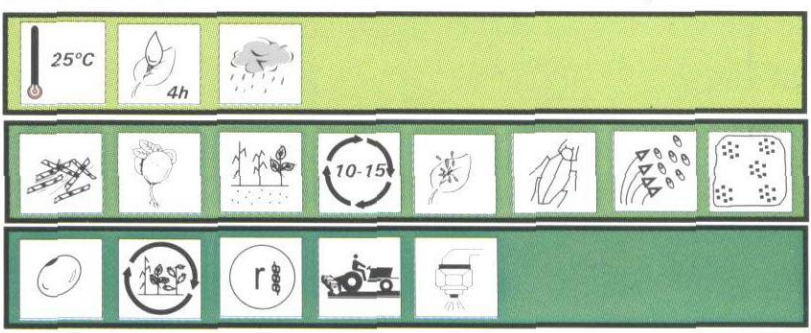
Mancha púrpura (sintomas em folhas)
Cercospora kikuchii (T. Matsu. & Tomoyasu) Gardner



Seca da haste e da vagem (sintomas em sementes)

Phomopsis spp.

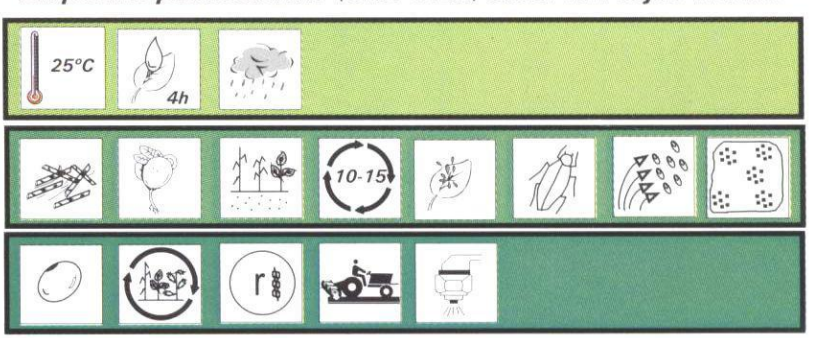
Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.



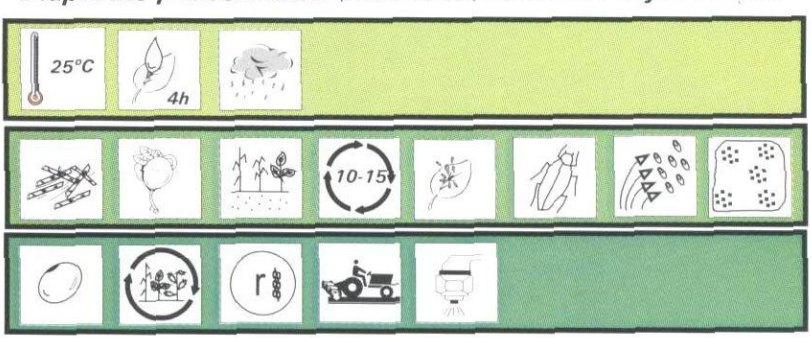
Seca da haste e da vagem (presença em sementes)

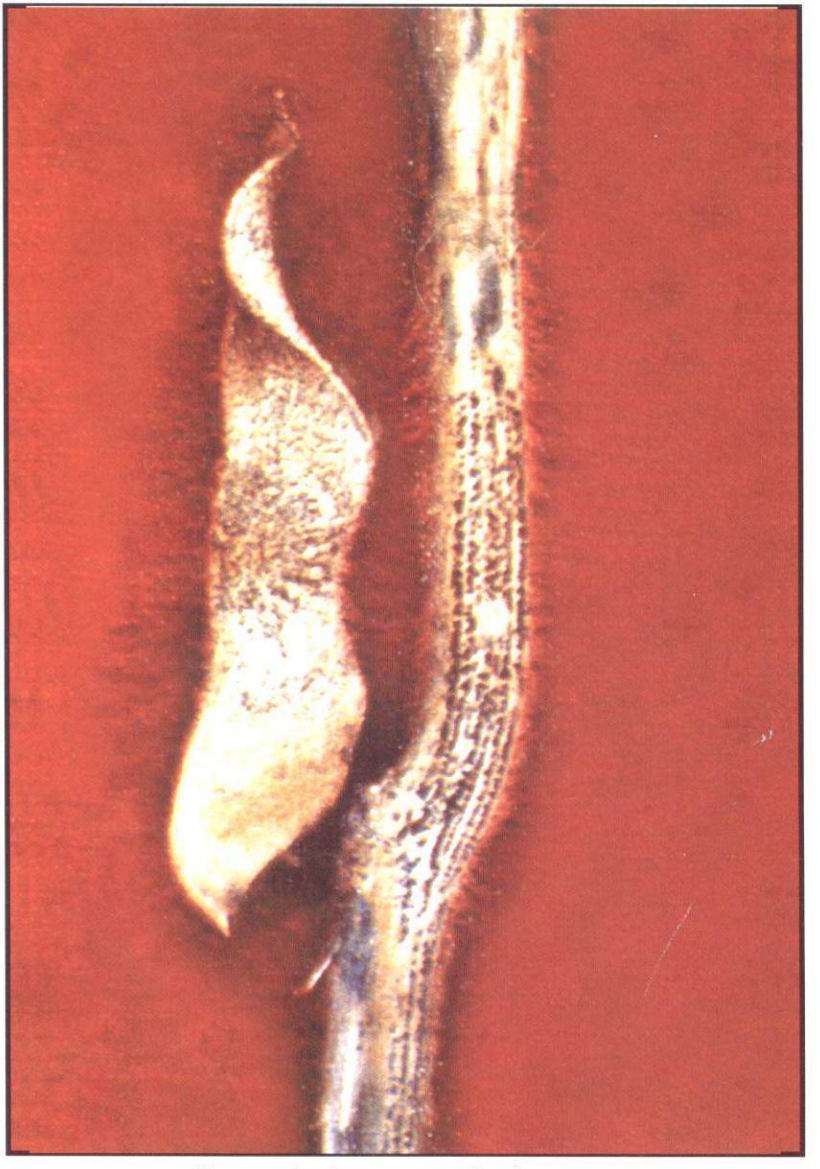
Phomopsis spp.

Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.



Seca da haste e da vagem (presença em sementes)
Phomopsis spp.
Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.

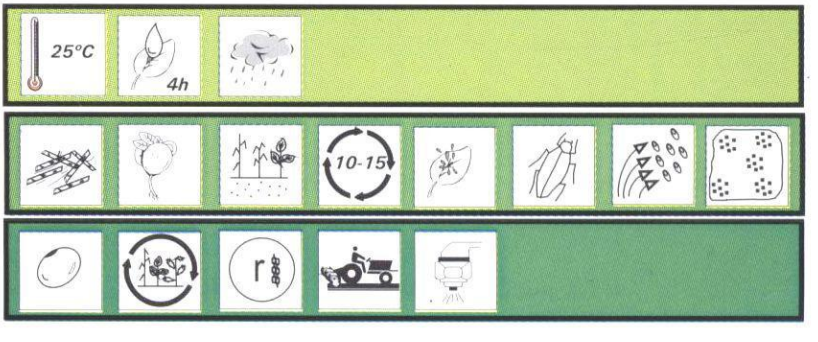




Seca da haste e da vagem

Phomopsis spp.

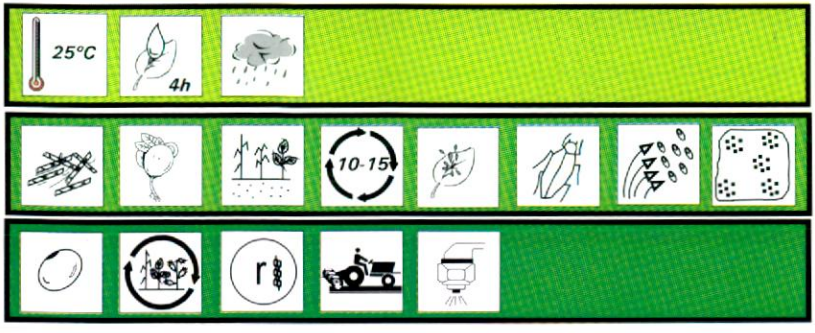
Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.

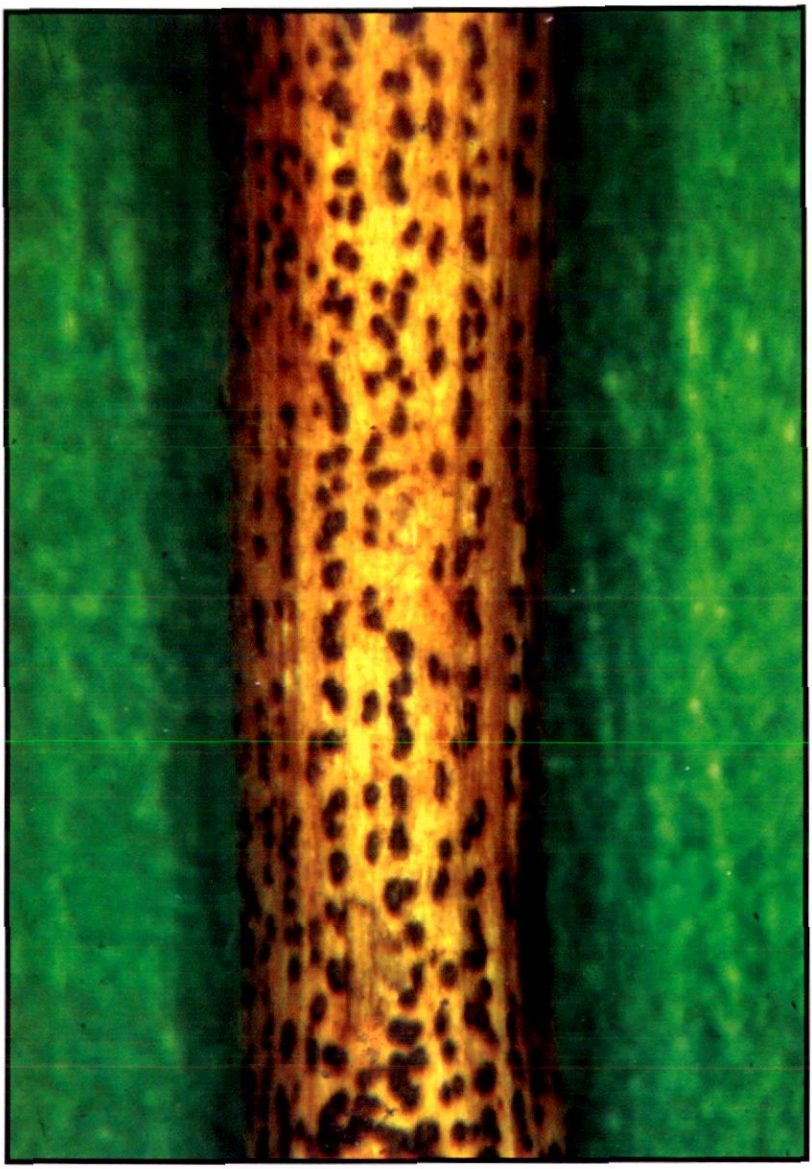


Seca da haste e da vagem

Phomopsis spp.

Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.

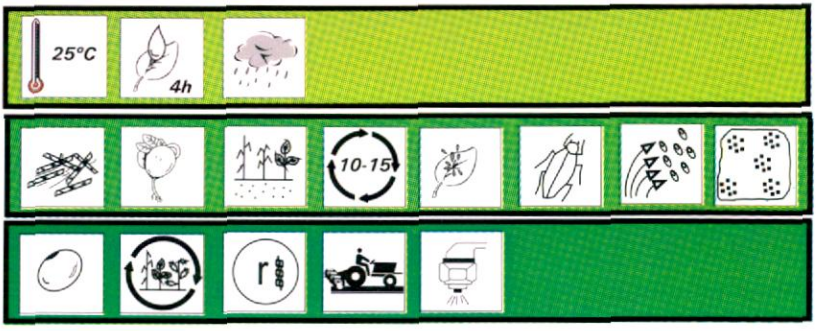


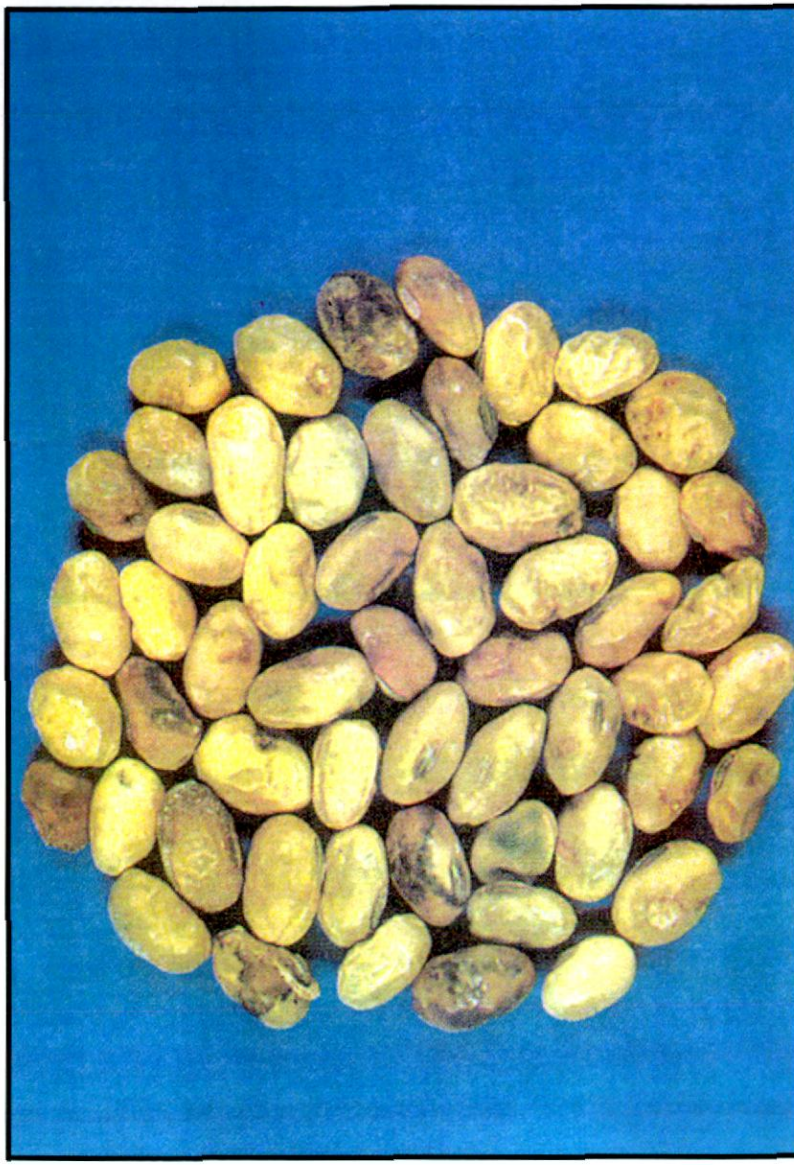


Seca da haste e da vagem

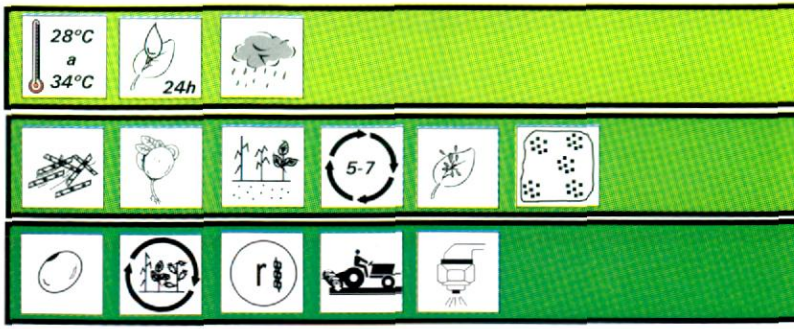
Phomopsis spp.

Diaporthe phaseolorum (Cke. & Ell.) Sacc. var. ***sojae*** Wehm.

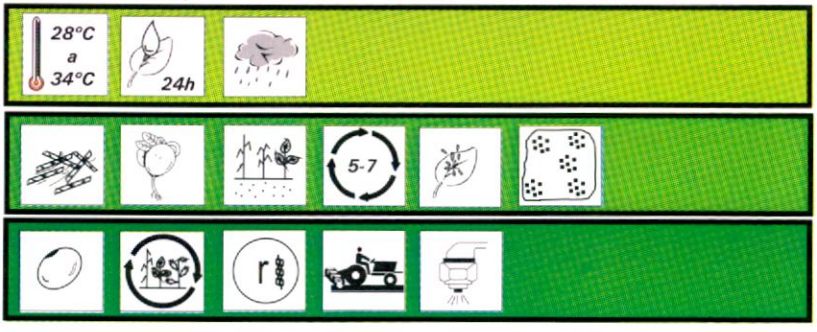




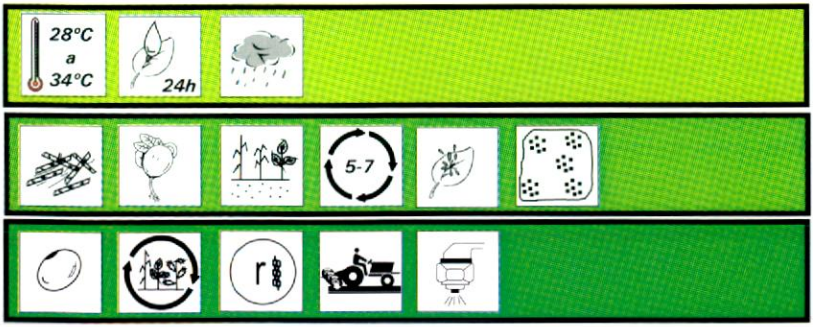
Antracnose (sintomas em sementes)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore

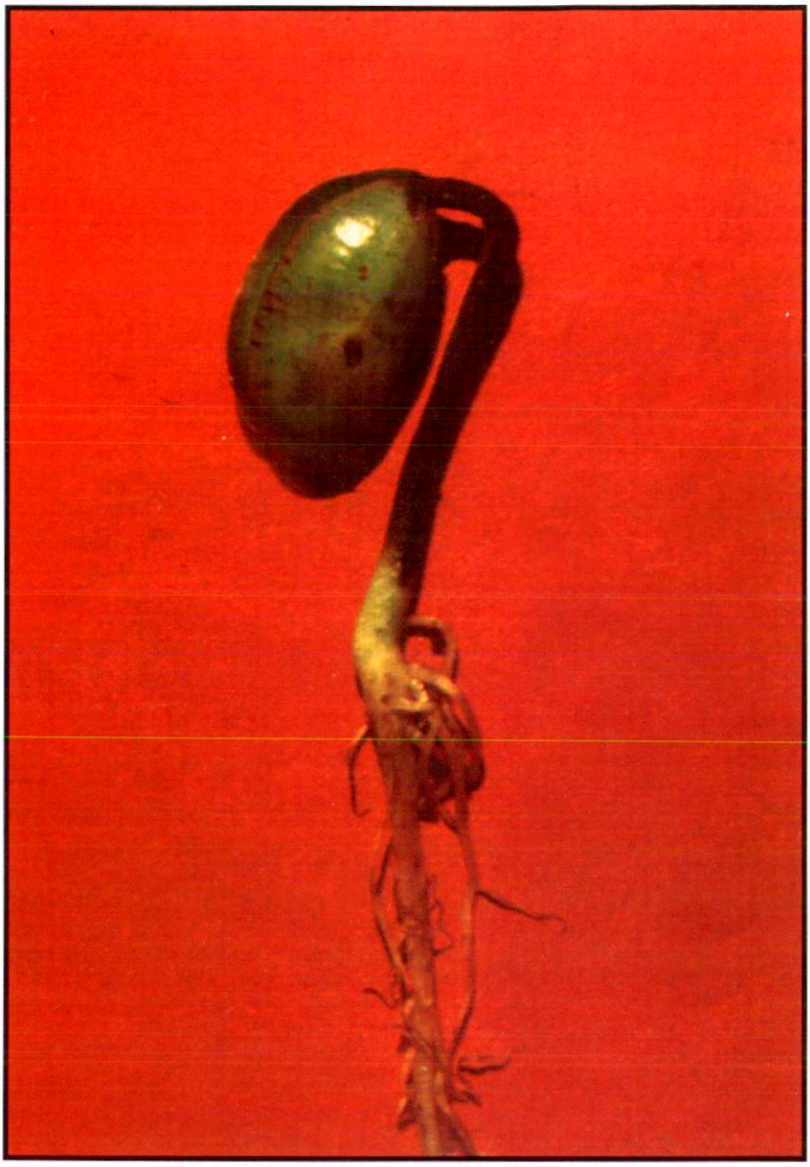


Antracnose (sinais em sementes)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore

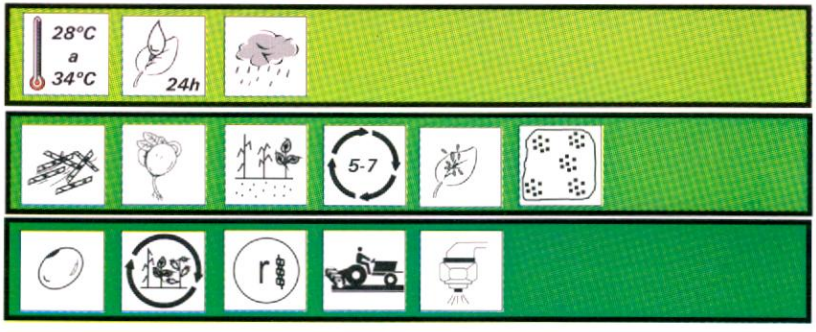


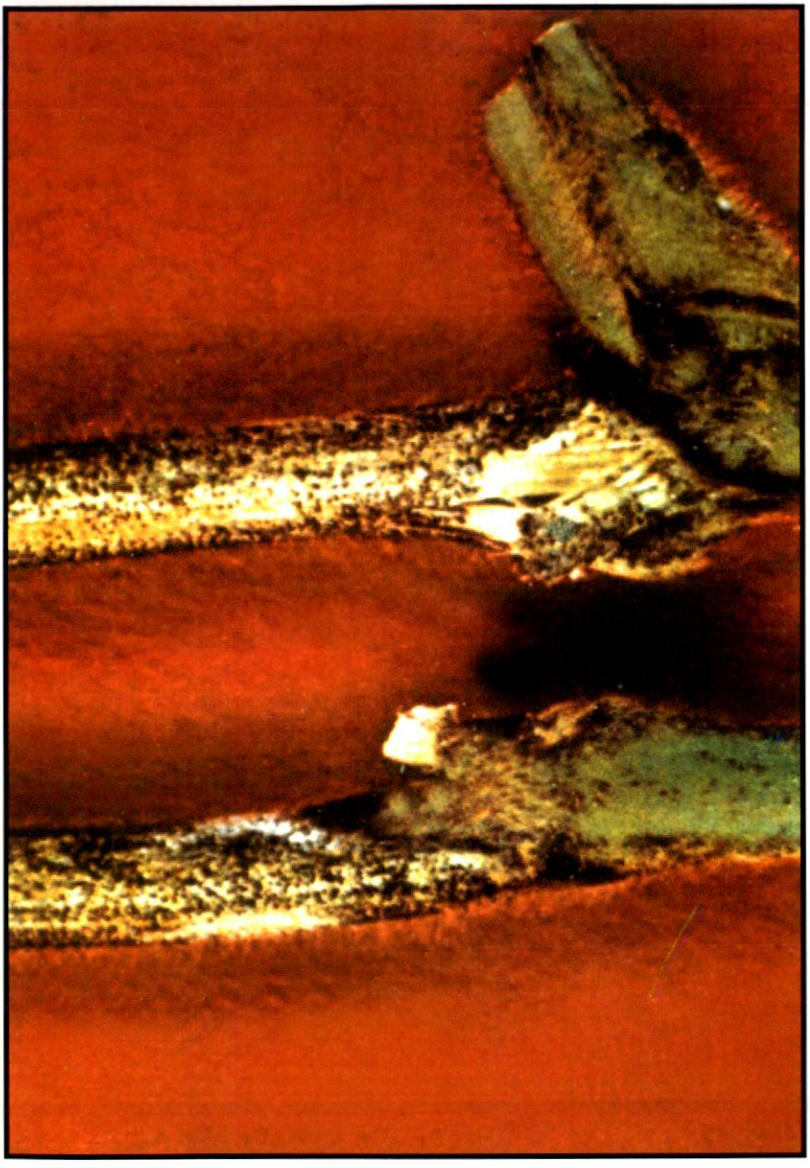
Antracnose (sintomas em cotilédones)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore



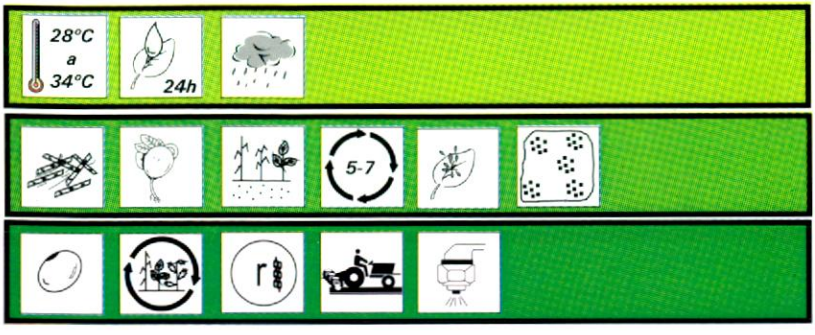


Antracnose (sintomas em plântulas)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore

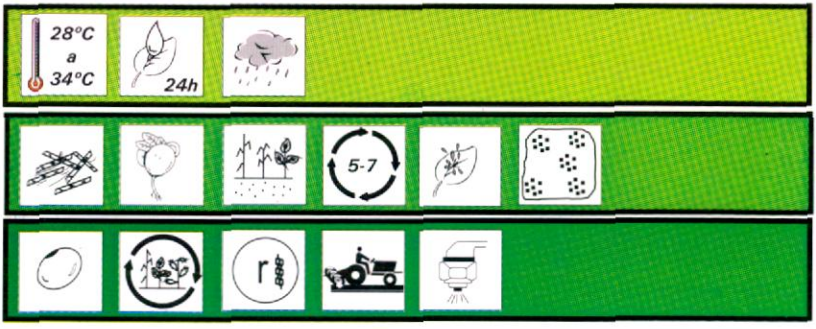




Antracnose (sintomas em hastes)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore



Antracnose (sintomas em folhas)
Colletotrichum truncatum (Schw.)
Andrus & W.D. Moore

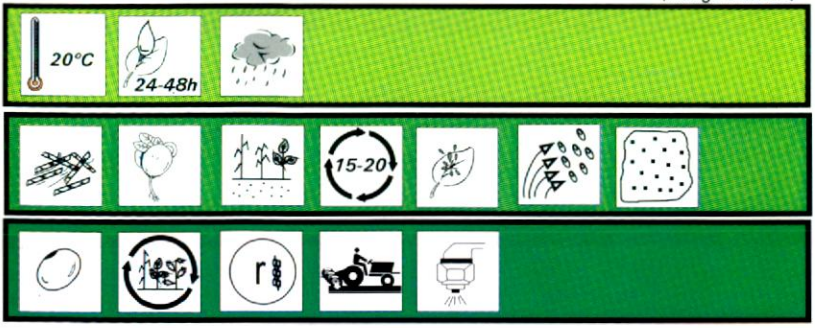


Cancro da haste (folha carijó)

Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

(Morgan-Jones)

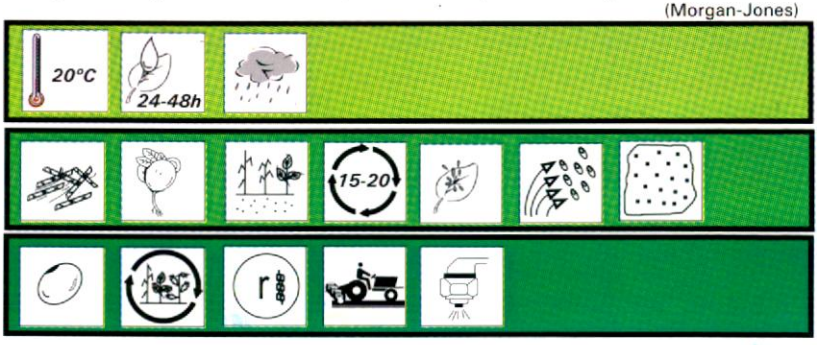


Cancro da haste (folha carijó)

Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

(Morgan-Jones)

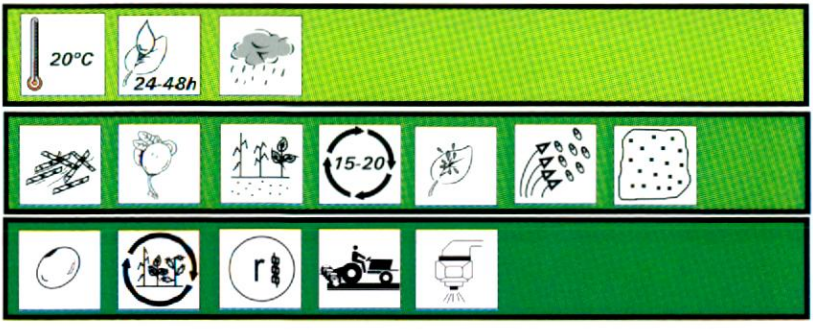


Cancro da haste (folha carijó)

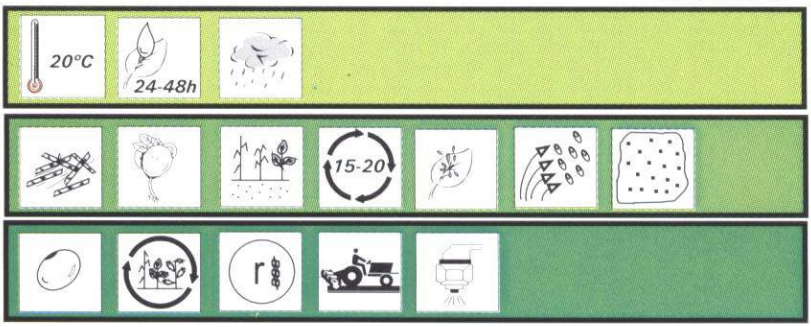
Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

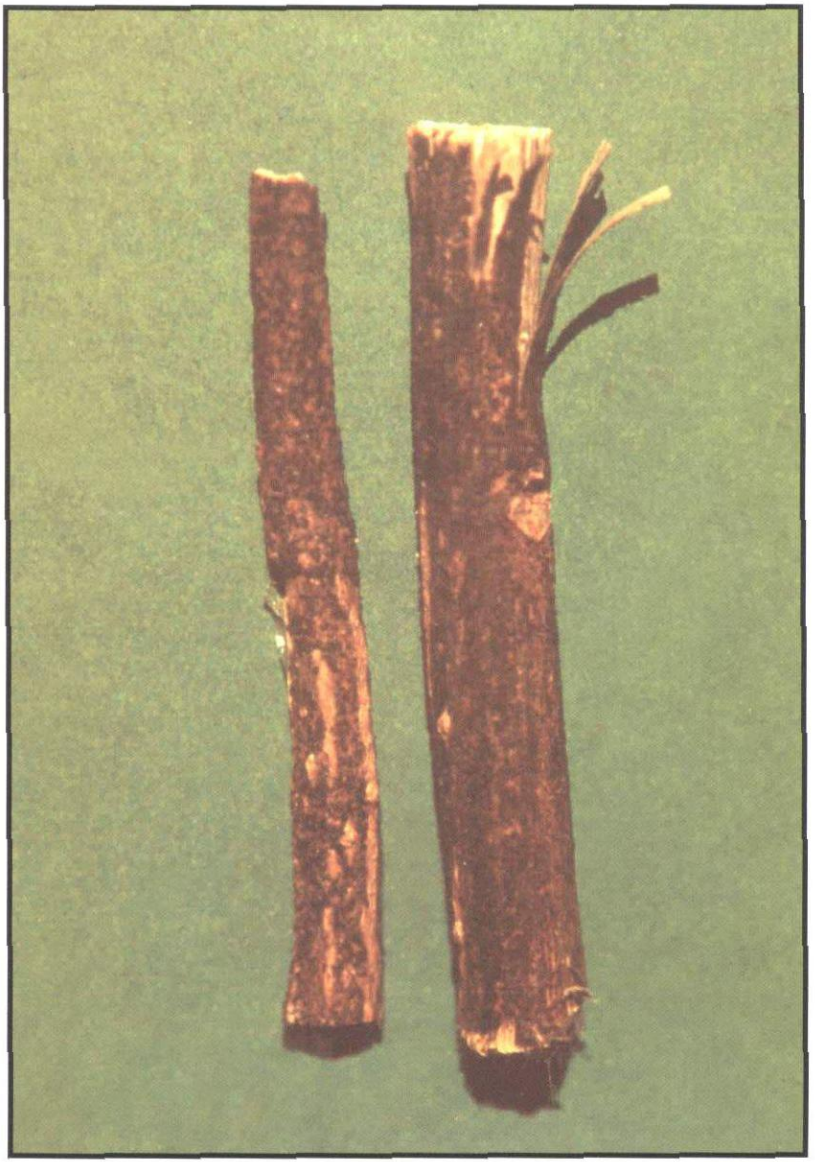
Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

(Morgan-Jones)



Cancro da haste (sintomas em haste)
Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***
Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***
(Morgan-Jones)



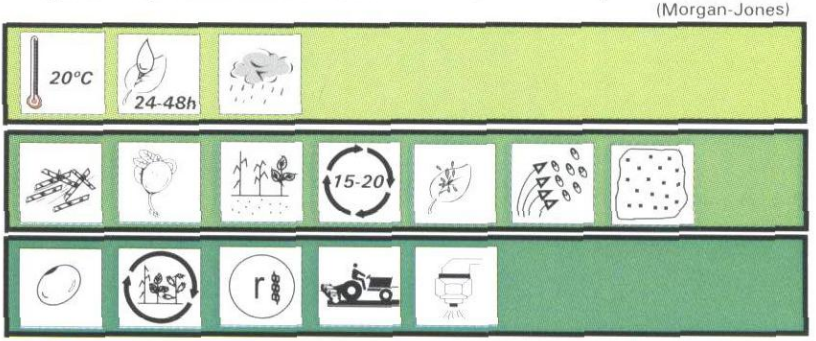


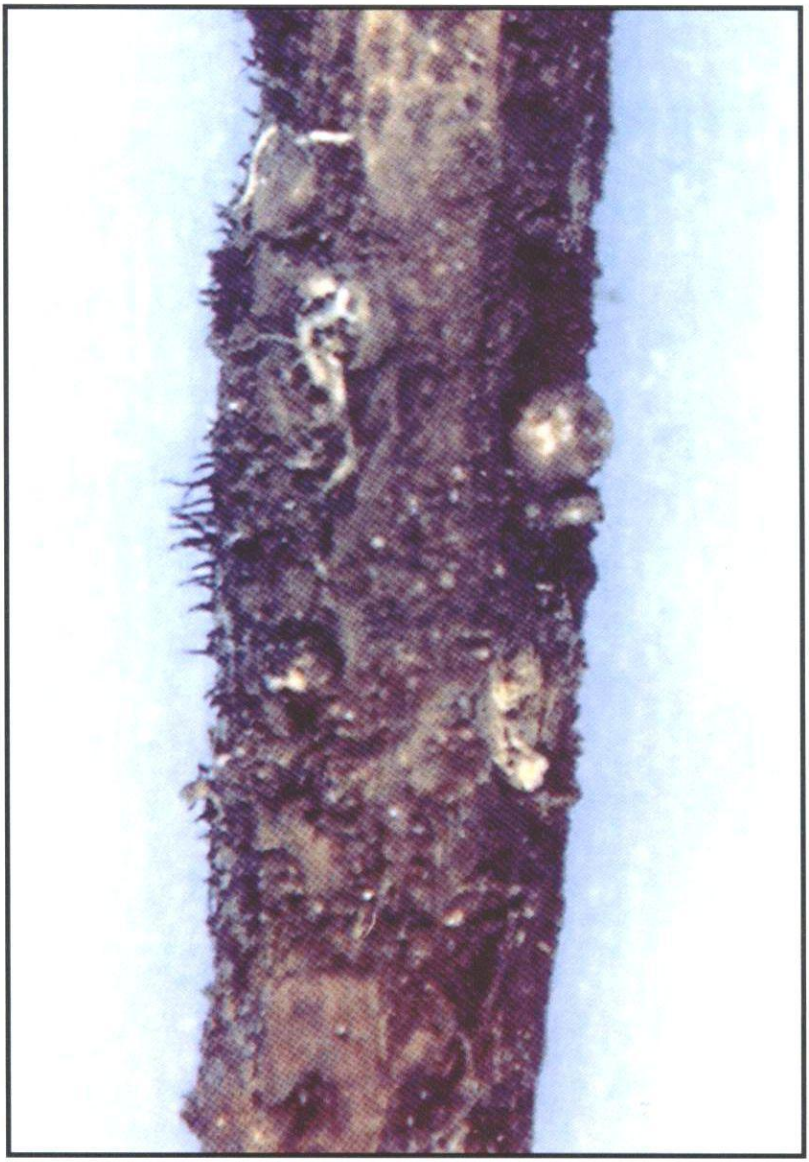
Cancro da haste (restos culturais infectados)

Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

(Morgan-Jones)



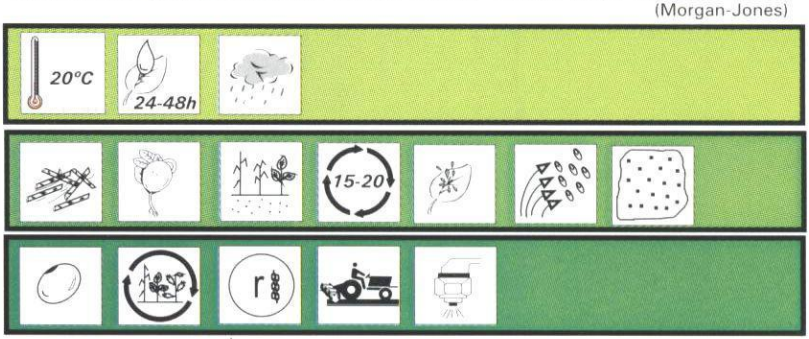


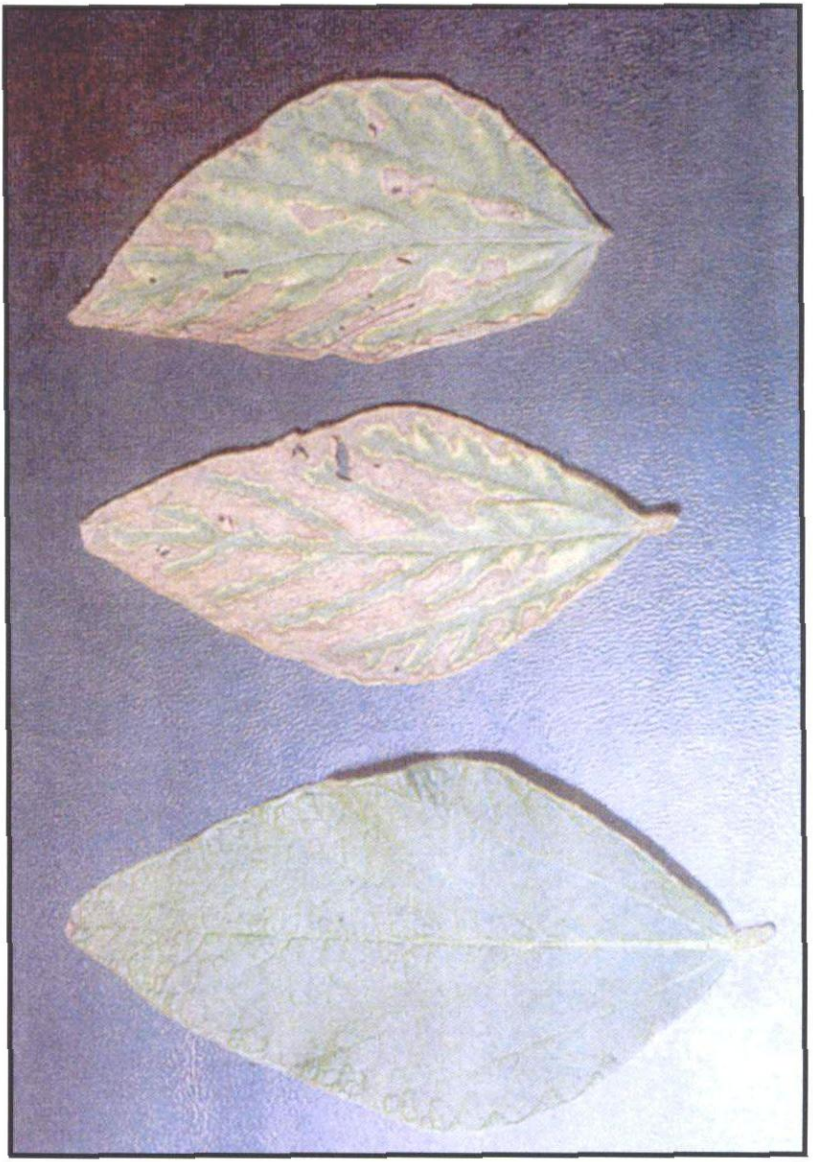
Cancro da haste (restos culturais infectados)

Phomopsis phaseoli (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

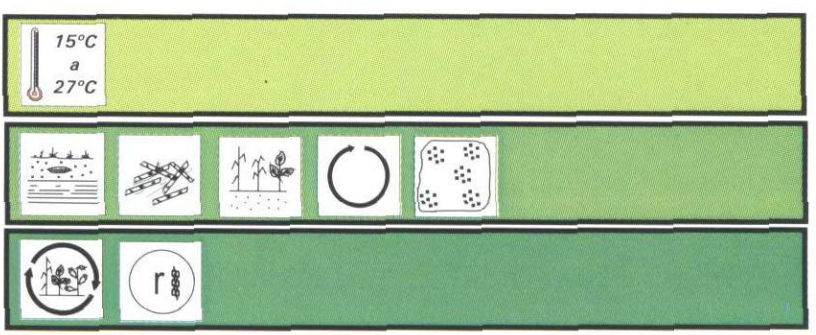
Diaporthe phaseolorum (Cke. & Ell.) Sacc. f.sp. ***meridionalis***

(Morgan-Jones)

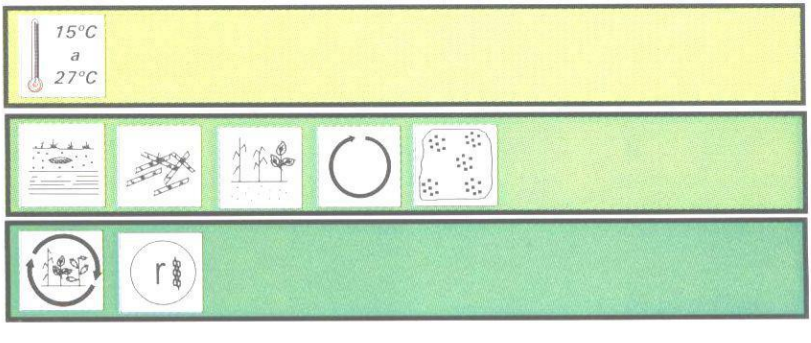




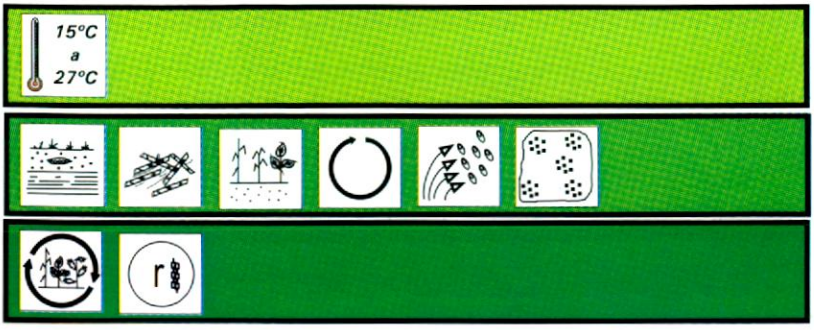
Podridão parda da haste (sintomas em folhas)
Phialophora gregata (Allington & Chamberl.) W. Gams.

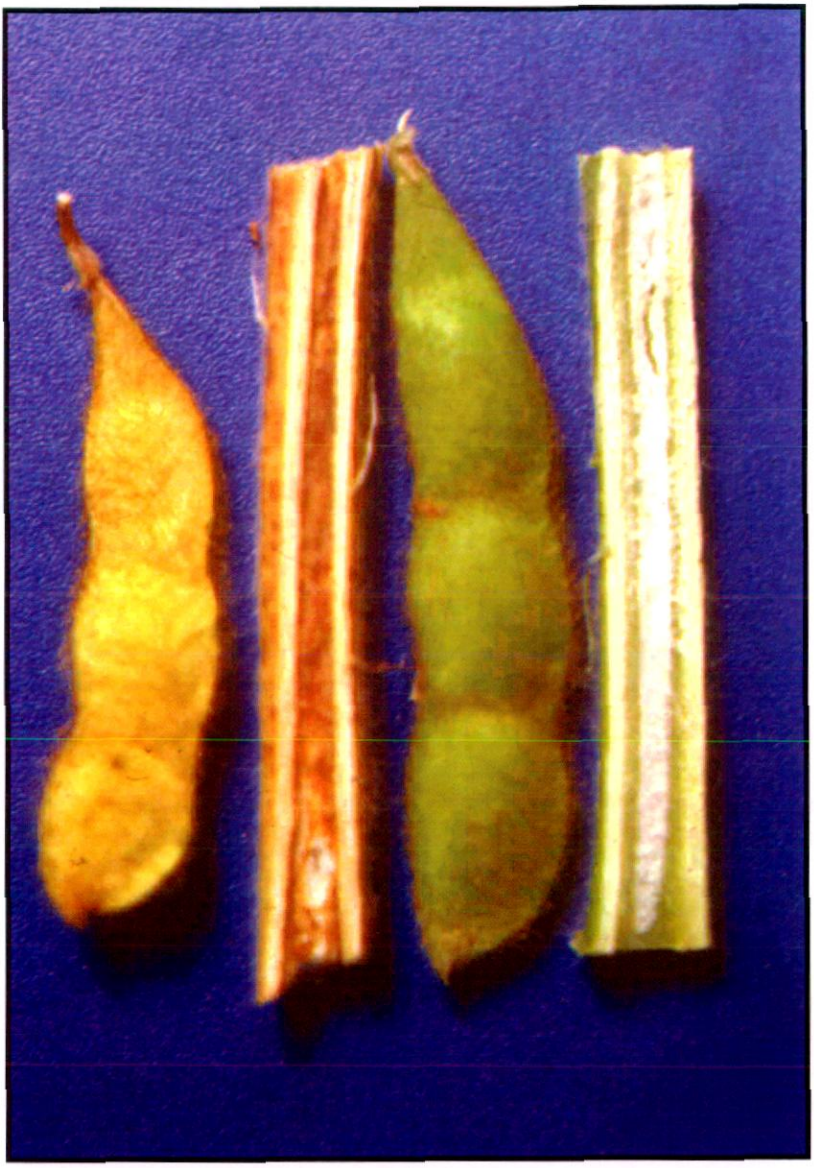


Podridão parda da haste (sintomas em plantas)
Phialophora gregata (Allington & Chamberl.) W. Gams.

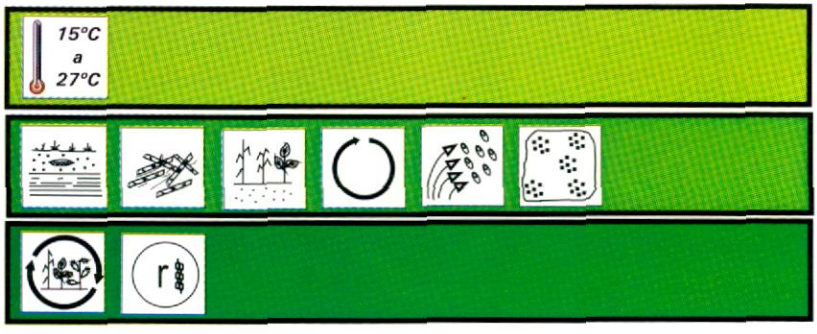


Podridão parda da haste (escurecimento da medula)
Phialophora gregata (Allington & Chamberl.) W. Gams.

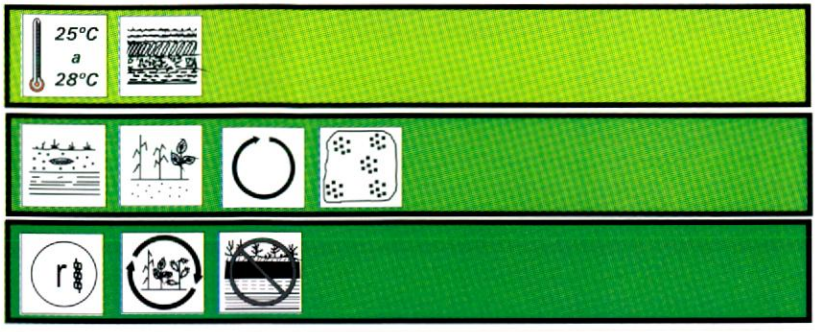




Podridão parda da haste (sintomas em hastes e em vagens)
Phialophora gregata (Allington & Chamberl.) W. Gams.

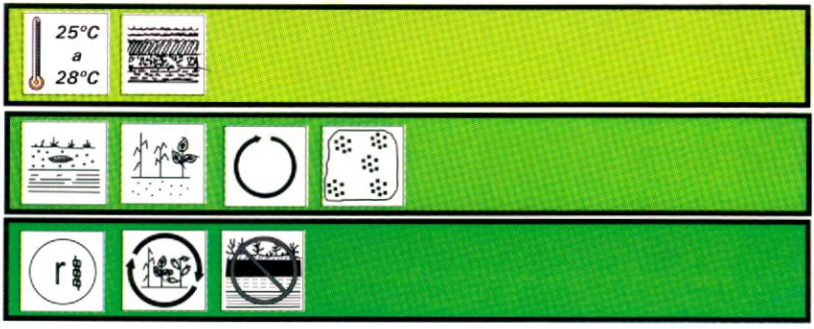


Podridão vermelha da raiz (sintomas em folhas)
Fusarium solani (Mart.) Sacc.

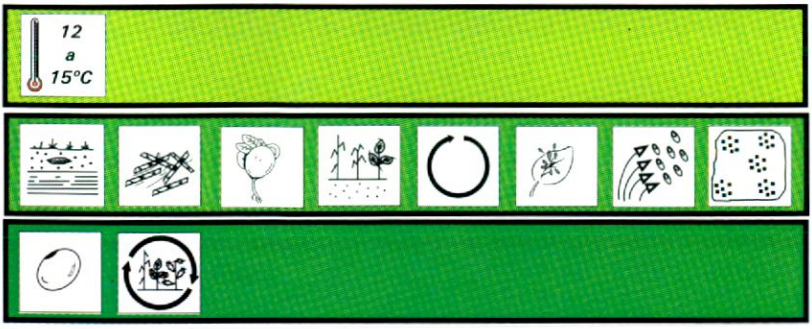


Podridão vermelha da raiz

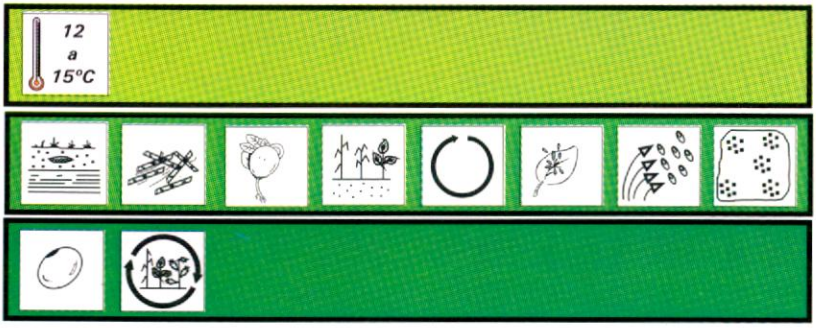
Fusarium solani (Mart.) Sacc.

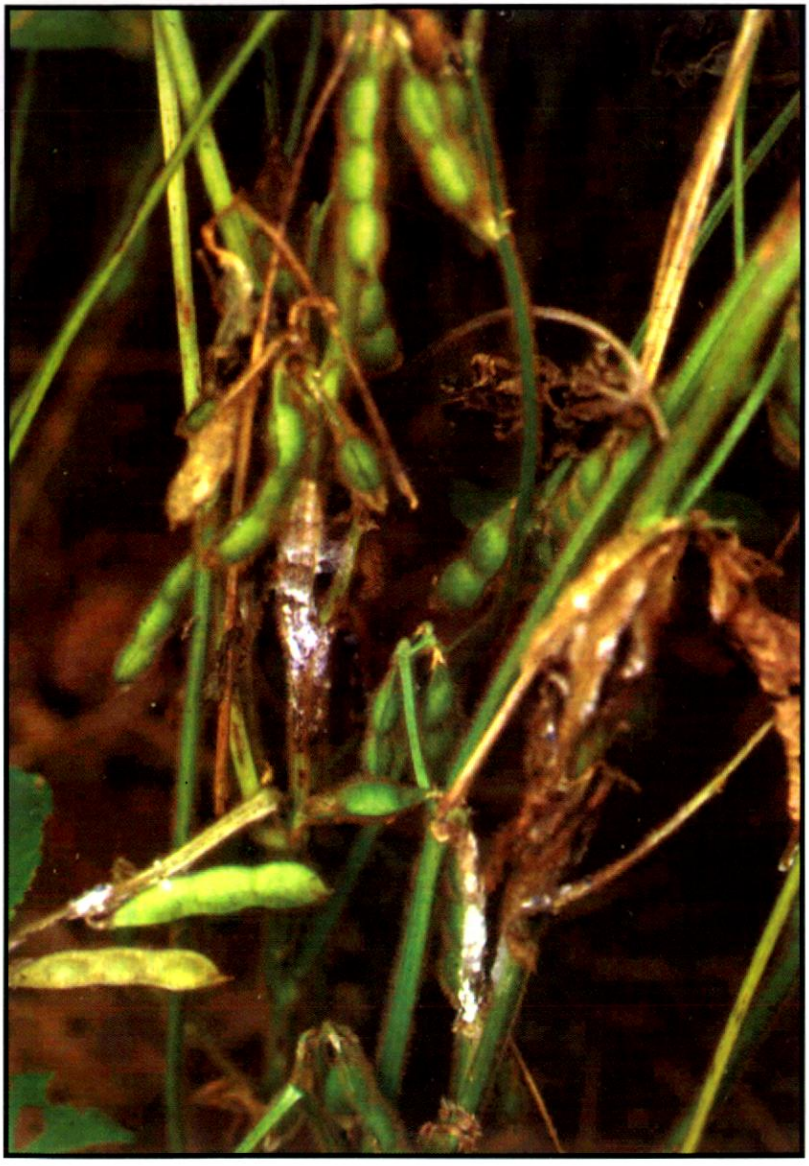


Mofo branco da haste (sintomas em campo)
Sclerotinia sclerotiorum (Lib.) de Bary



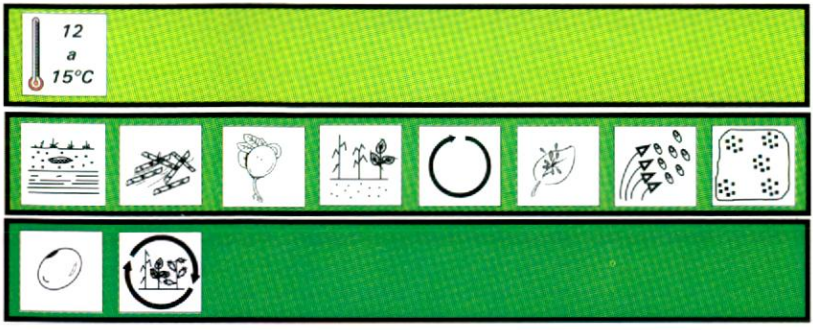
Mofo branco da haste (sintomas em folhas)
Sclerotinia sclerotiorum (Lib.) de Bary

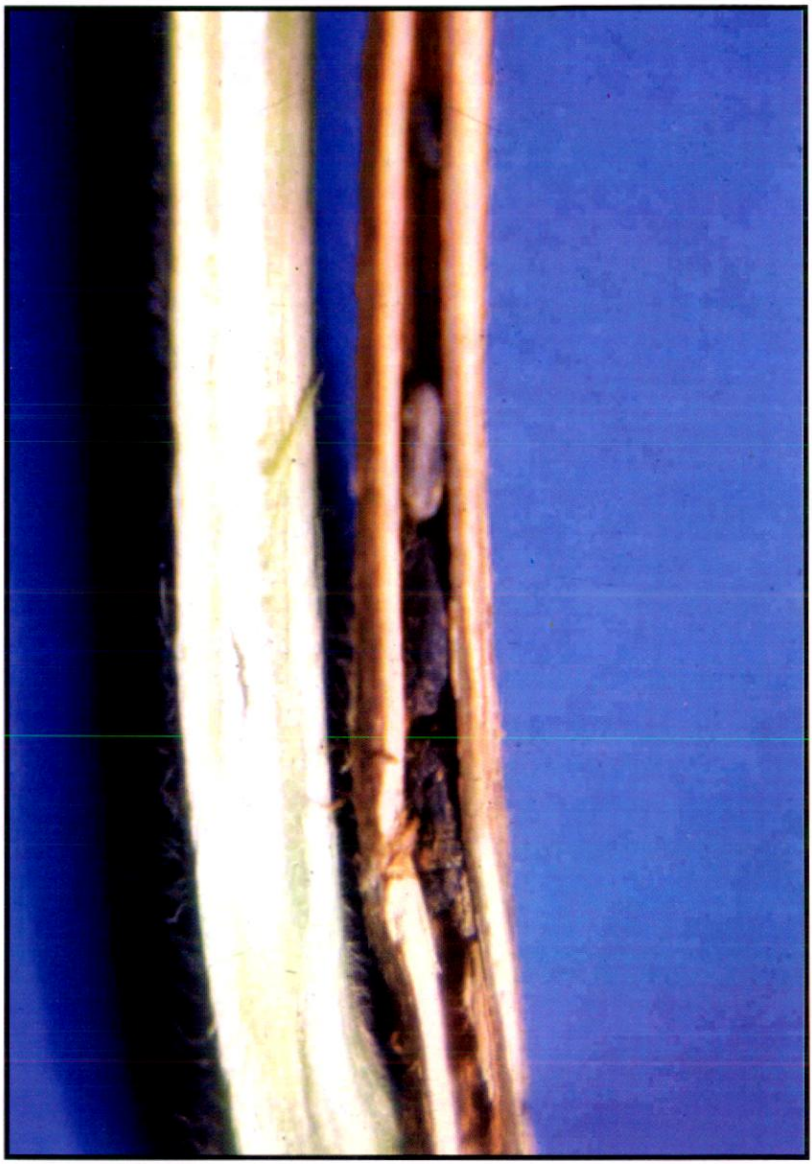




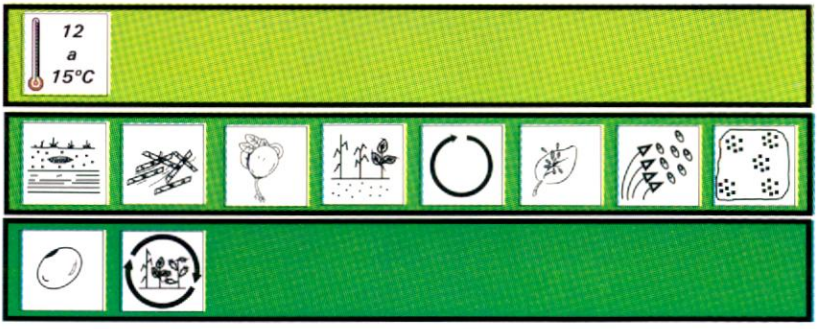
Mofo branco da haste

Sclerotinia sclerotiorum (Lib.) de Bary

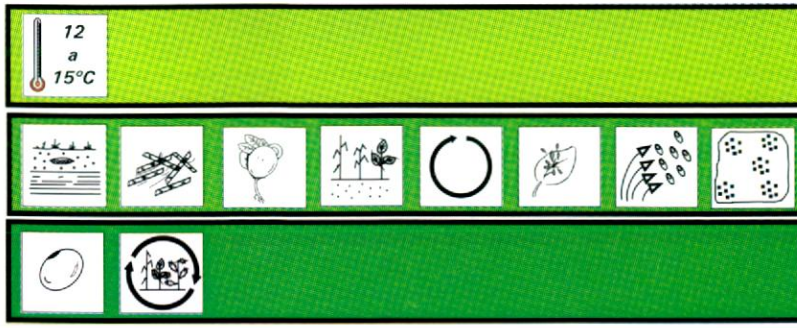




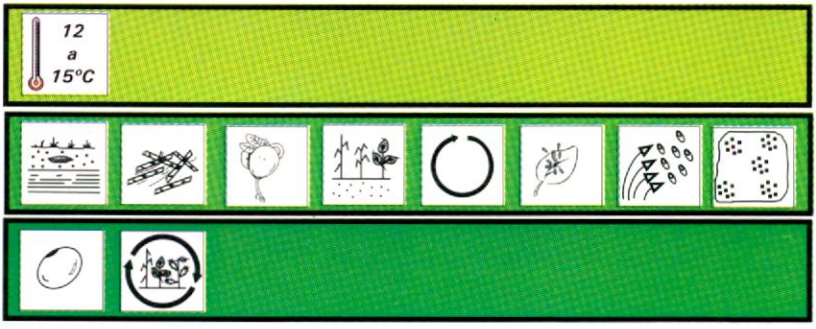
Mofo branco da haste (escleródios no interior da haste)
Sclerotinia sclerotiorum (Lib.) de Bary



Mofo branco da haste (escleródios com sementes)
Sclerotinia sclerotiorum (Lib.) de Bary



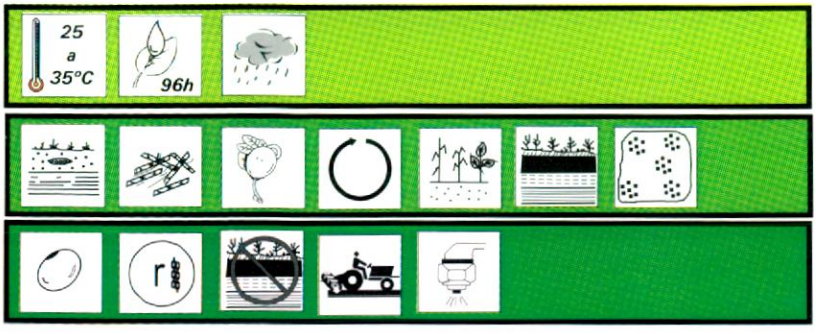
Mofo branco da haste (escleródios)
Sclerotinia sclerotiorum (Lib.) de Bary



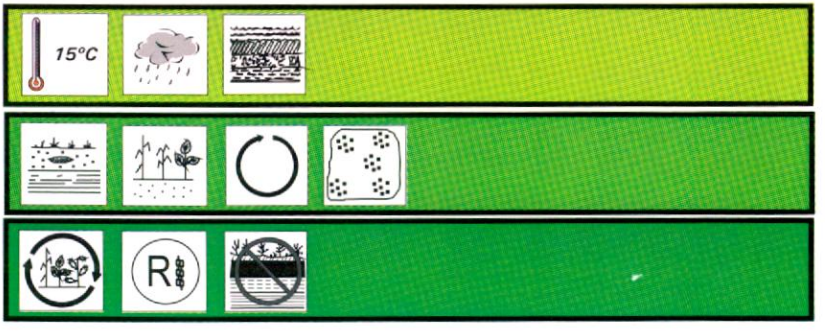
Murcha de esclerotium

Sclerotium rolfsii Sacc.

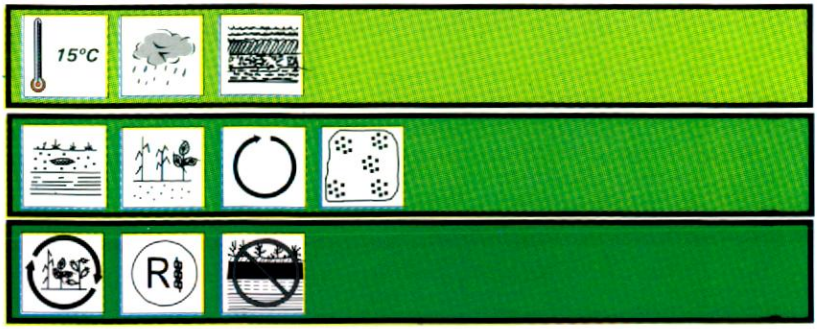
Athelia rolfsii (Cursi) Tu & Kimbrough

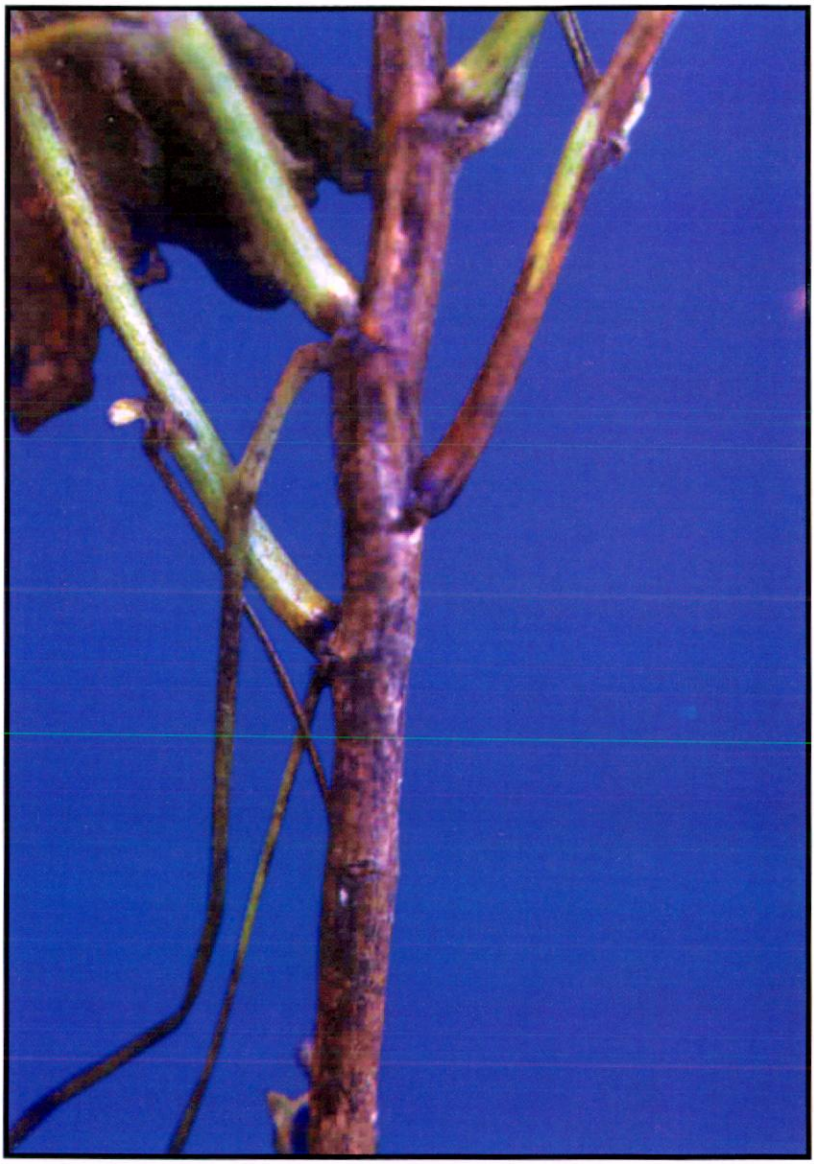


Podridão da raiz e da haste (sintomas em plantas)
Phytophthora megasperma (Drechs.) f.sp. ***glycinea***
Kuan & Erwin

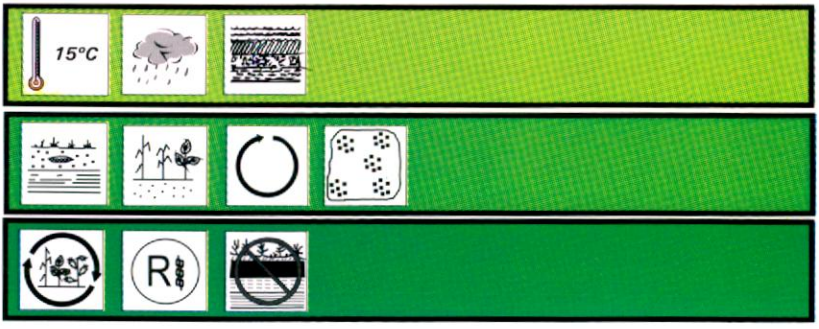


Podridão da raiz e da haste (sintomas em haste)
Phytophthora megasperma (Drechs.) f.sp. ***glycinea***
Kuan & Erwin





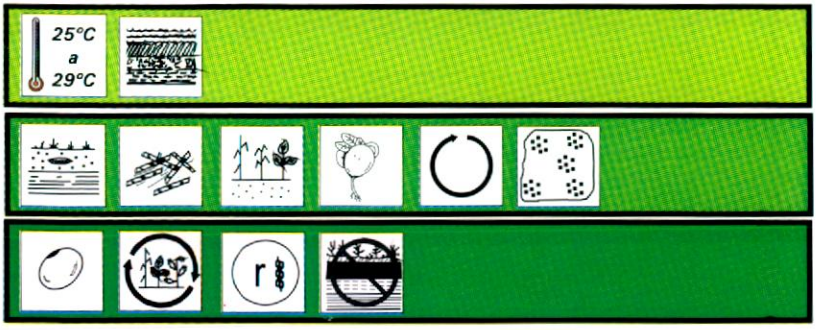
Podridão da raiz e da haste (sintomas em plantas)
Phytophthora megasperma (Drechs.) f.sp. ***glycinea***
Kuan & Erwin

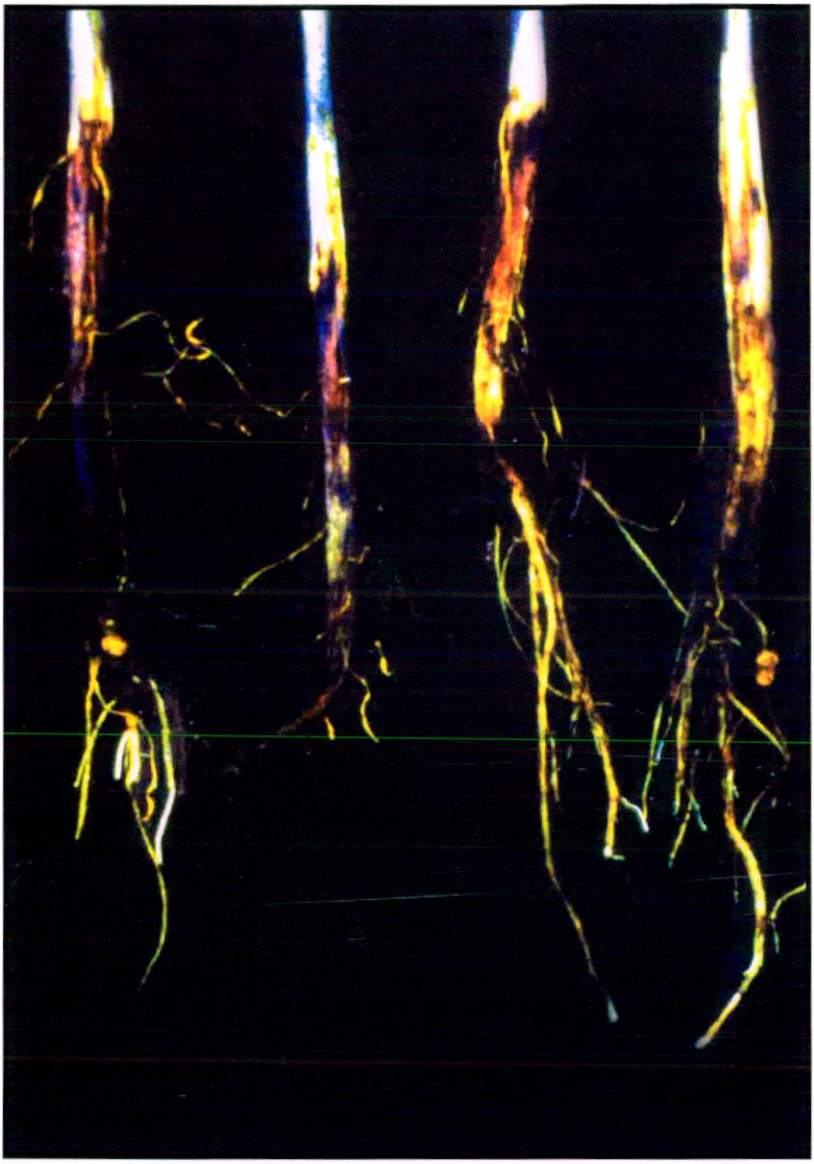


Mela da folha

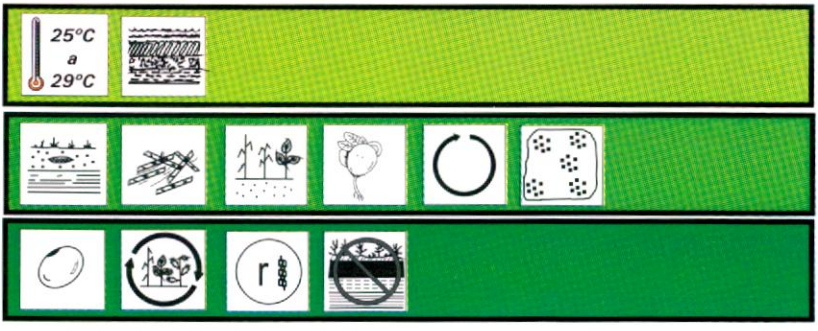
Rhizoctonia solani Kühn

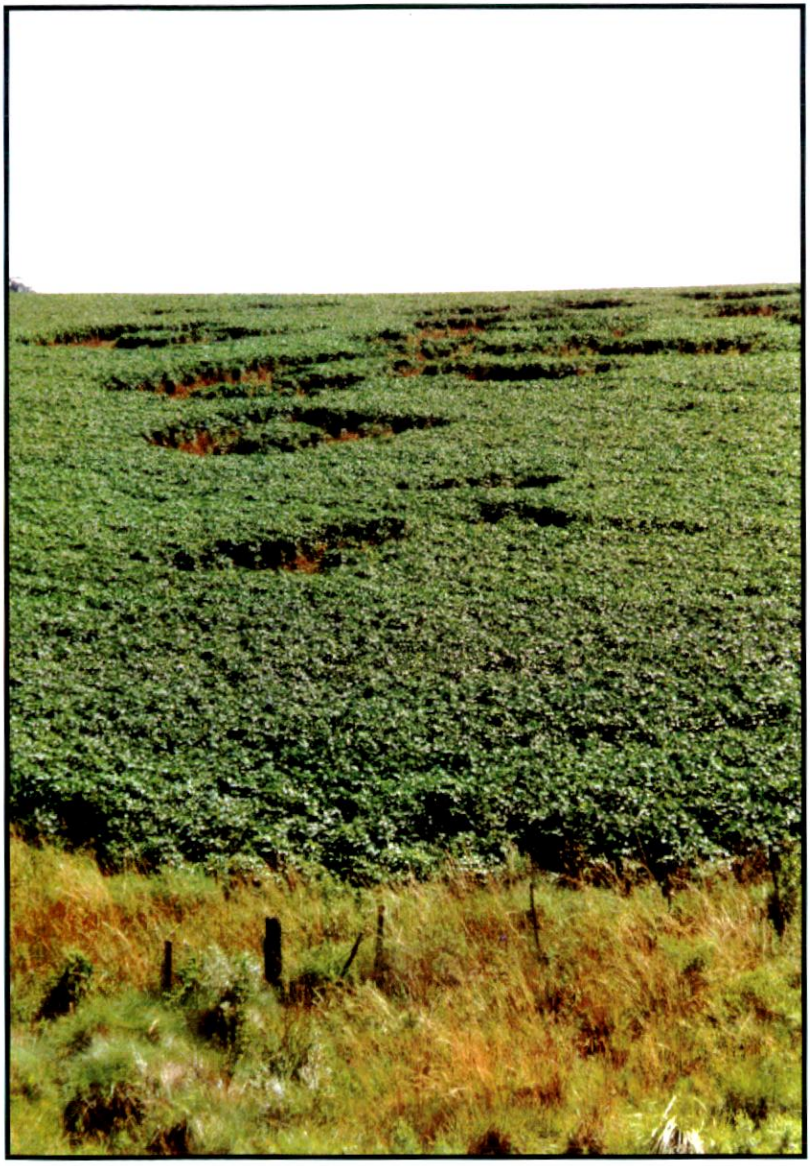
Thanatephorus cucumeris (A.B. Frank) Donk





Tombamento (sintomas em plantas jovens)
Rhizoctonia solani Kühn
Thanatephorus cucumeris (A.B. Frank) Donk

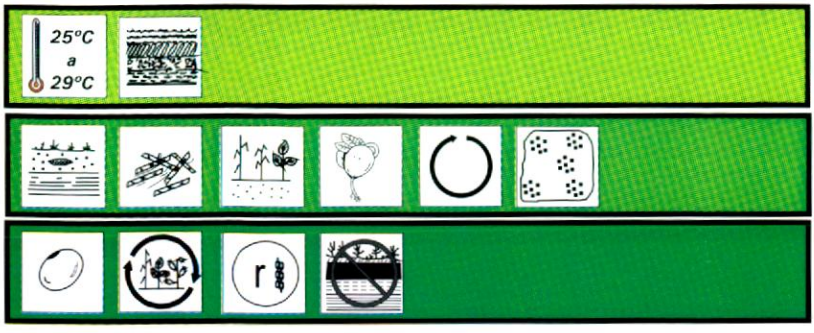




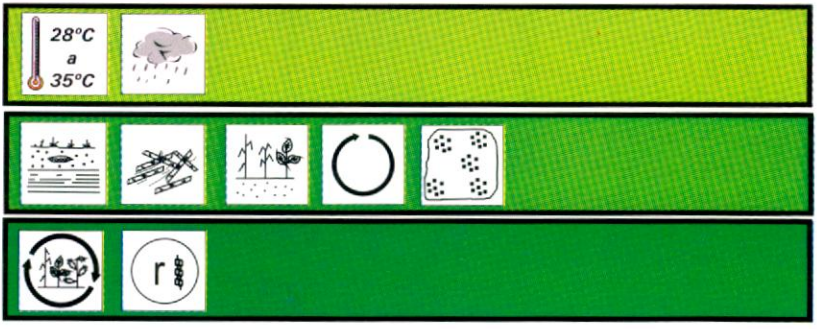
Morte em reboleira

Rhizoctonia solani Kühn

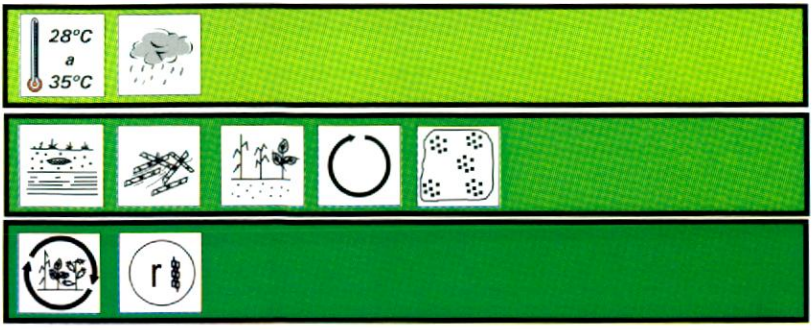
Thanatephorus cucumeris (A.B. Frank) Donk



Roseliniose (folha carijó)
Dematophora necatrix Hartig
Rosellinia necatrix Prill

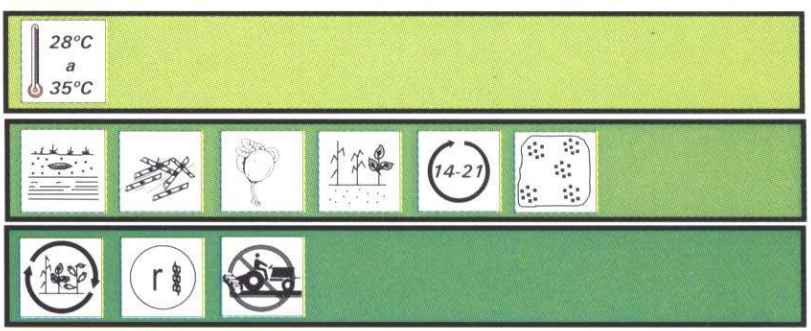


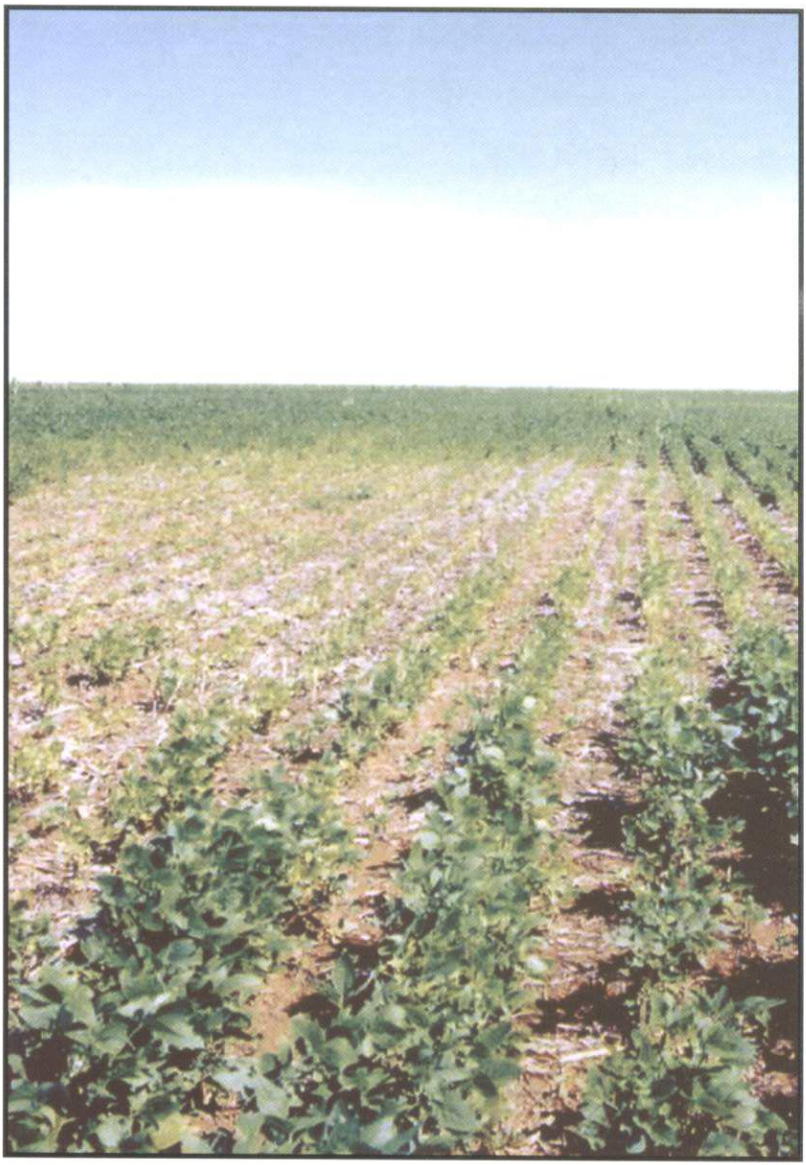
Roseliniose (podridão branca do colo)
Dematophora necatrix Hartig
Rosellinia necatrix Prill



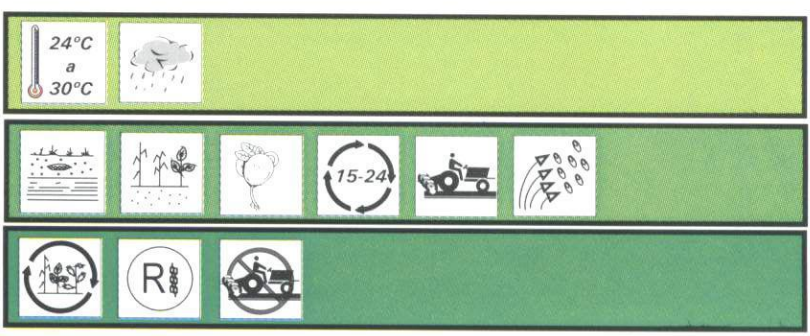
Podridão negra da raiz

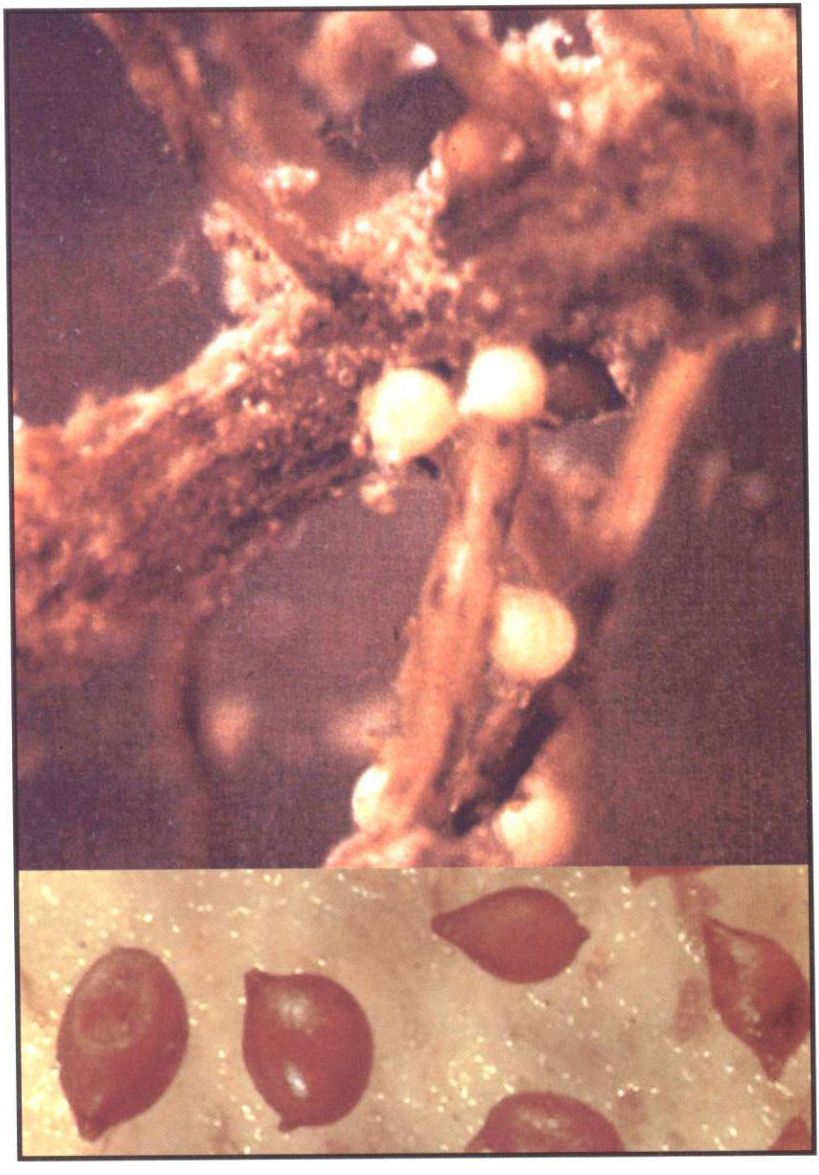
Macrophomina phaseolina (Tassi) Goidanich



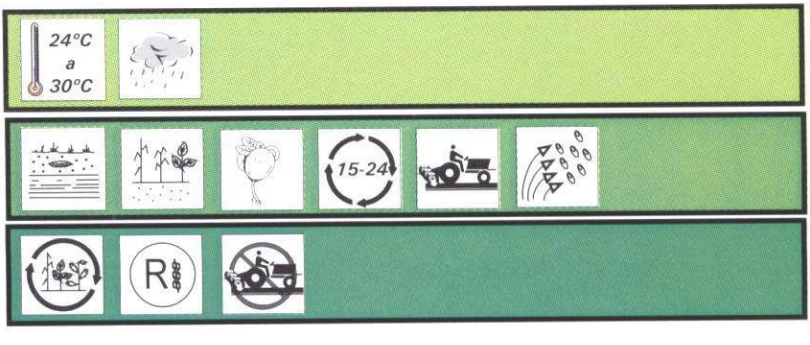


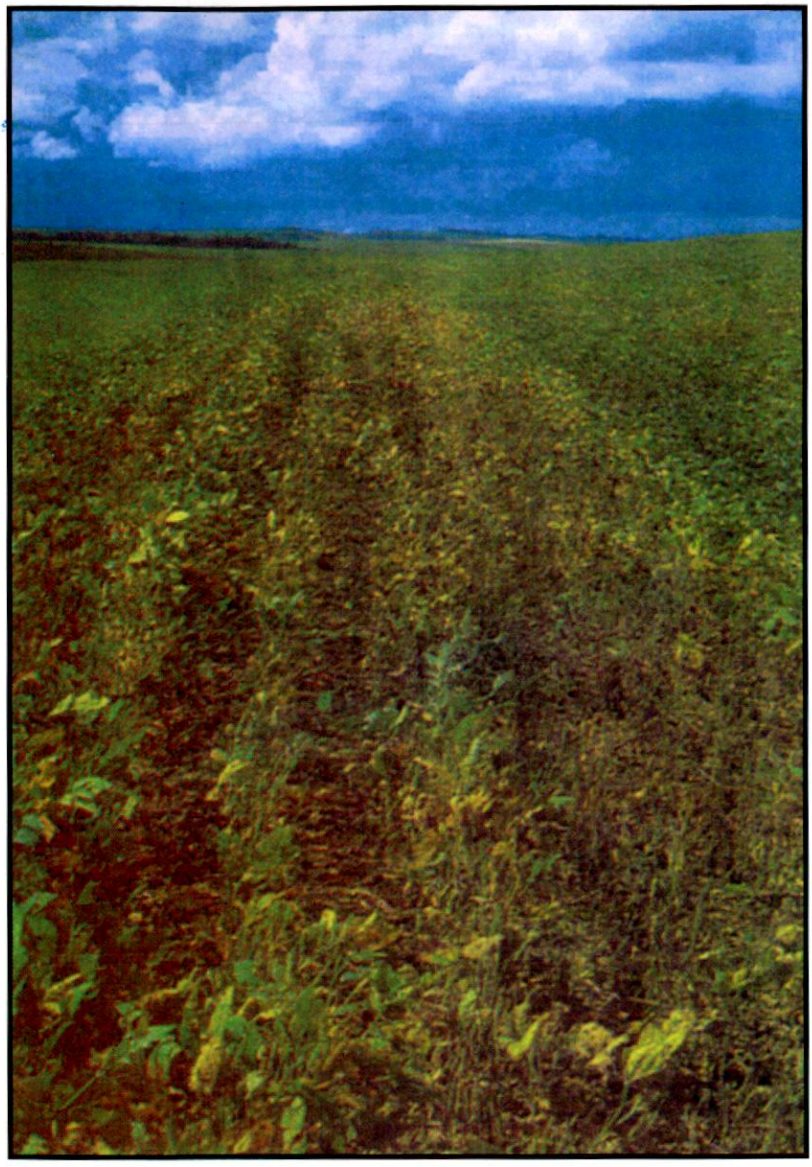
Nematóide de cisto (vista da lavoura)
Heterodera glycines Ichinohe



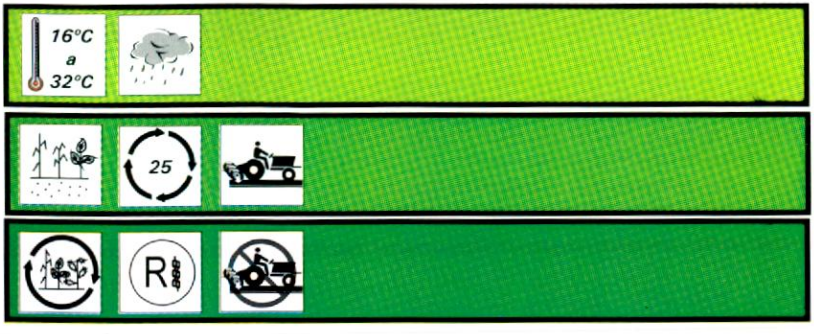


Nematóide de cisto (cistos)
Heterodera glycines Ichinohe





Nematóide de galha (vista da lavoura)
Meloidogyne incognita (Kofoid & Withe) Chitwood
Meloidogyne javanica (Treub) Chitwood



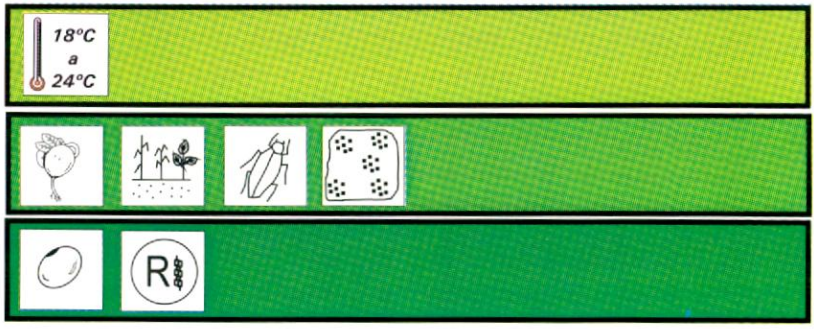
Nematóide de galha (galhas)
Meloidogyne incognita (Kofoid & Withe) Chitwood
Meloidogyne javanica (Treub) Chitwood

Nematóide de galha (galhas)

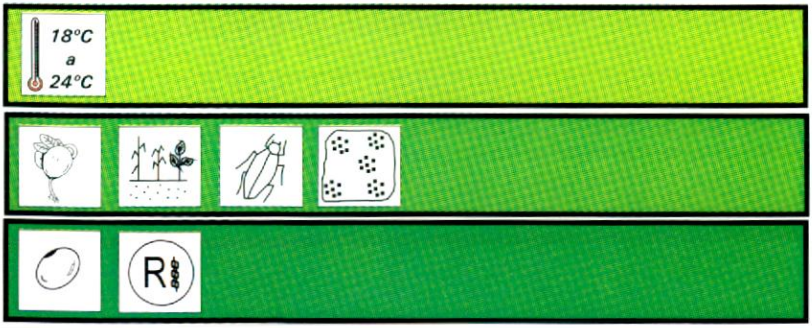
Meloidogyne incognita (Kofoid & Withe) Chitwood

Meloidogyne javanica (Treub) Chitwood

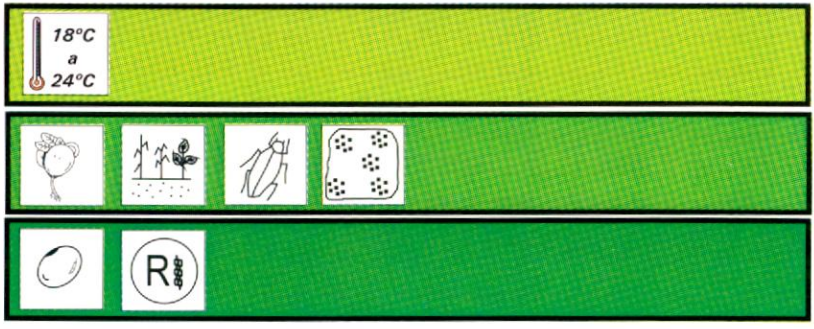
Mosaico comum da soja (sintomas em folhas)
Soybean mosaic virus - SMV



Mosaico comum da soja (sintomas em sementes)
Soybean mosaic virus - SMV

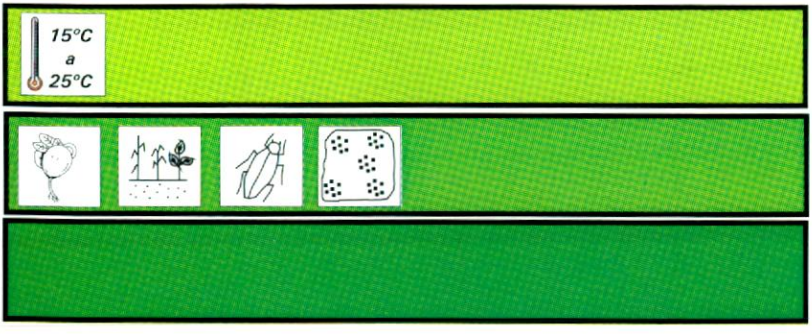


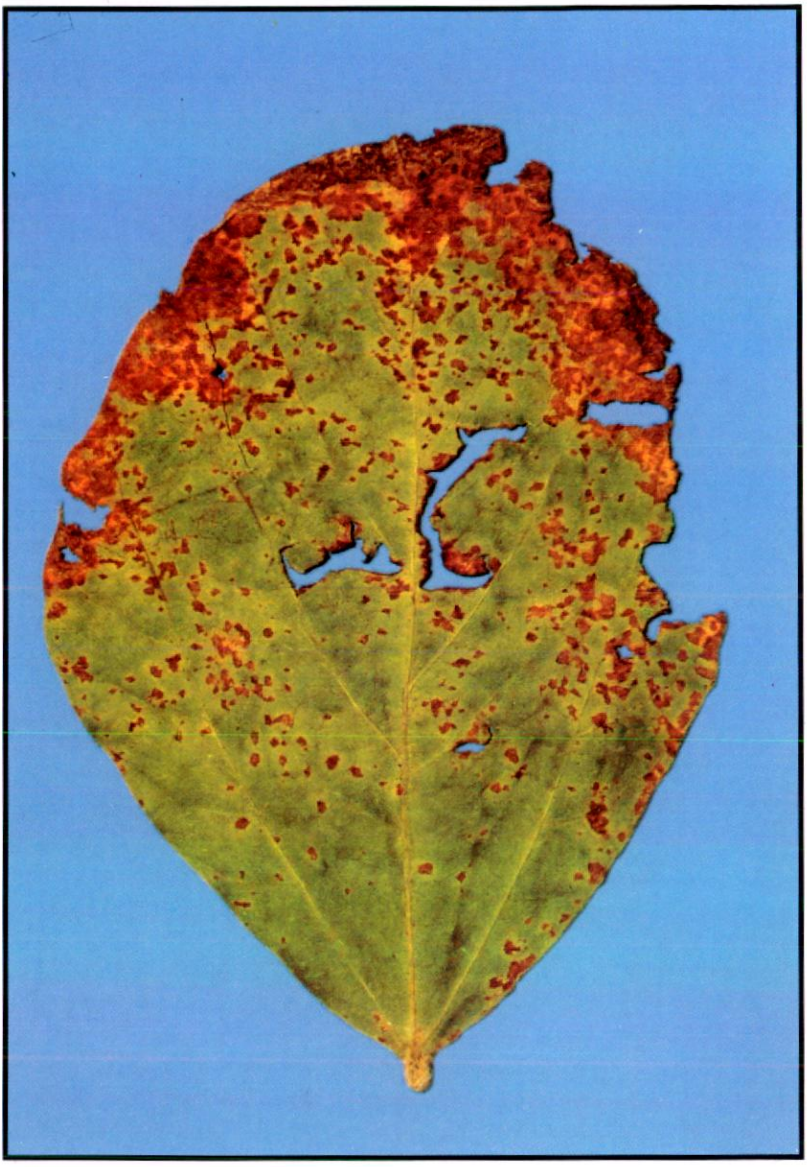
Mosaico comum da soja (sintomas em sementes)
Soybean mosaic virus - SMV



Queima do broto

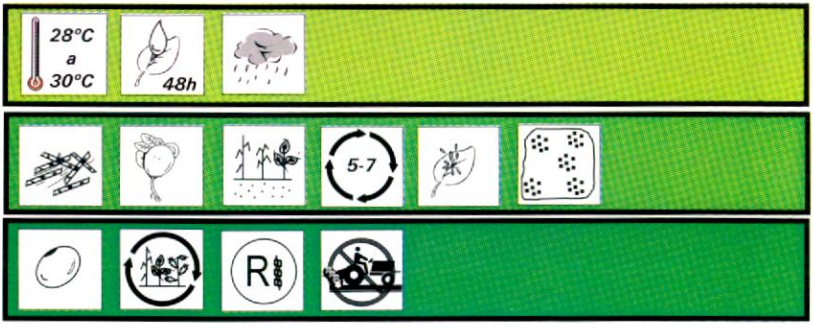
Tobacco streak virus - TSV

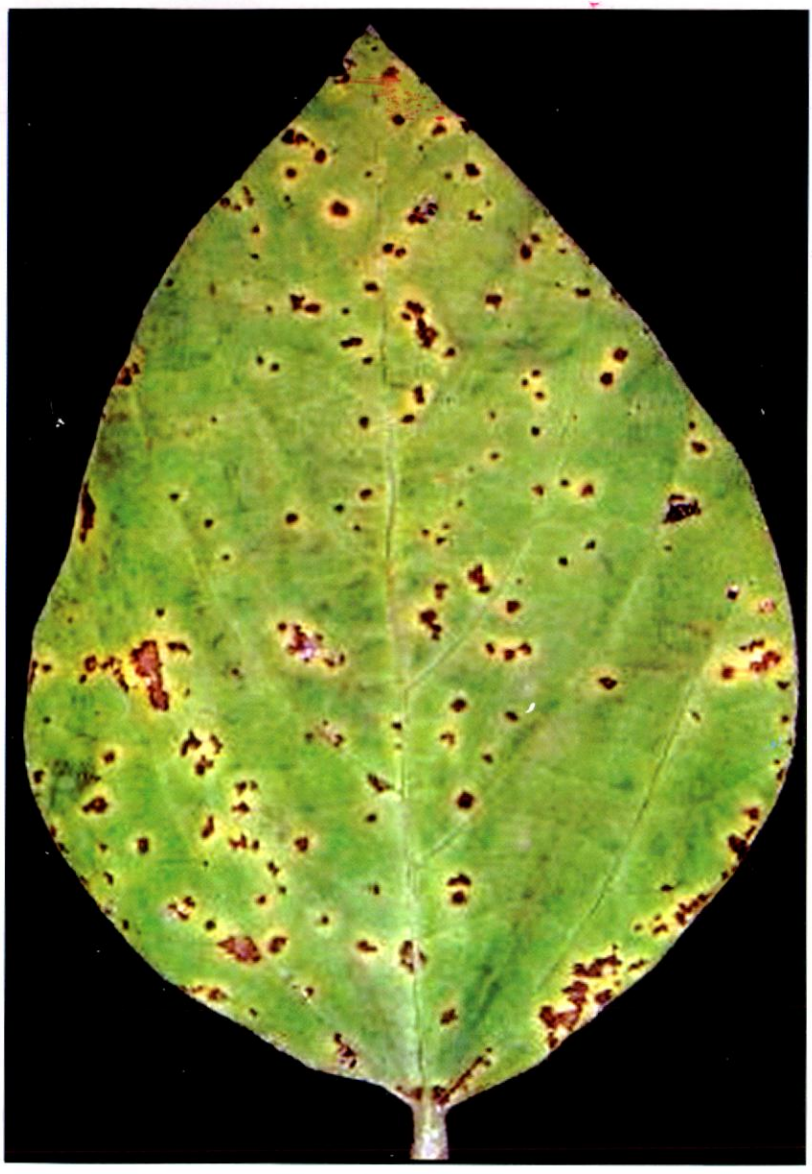




Pústula bacteriana (sintomas em folhas)

Xanthomonas axonopodis pv. ***glycinea*** (Nakano, 1919)
Vanterin Hoste, Kersters & Swings, 1995





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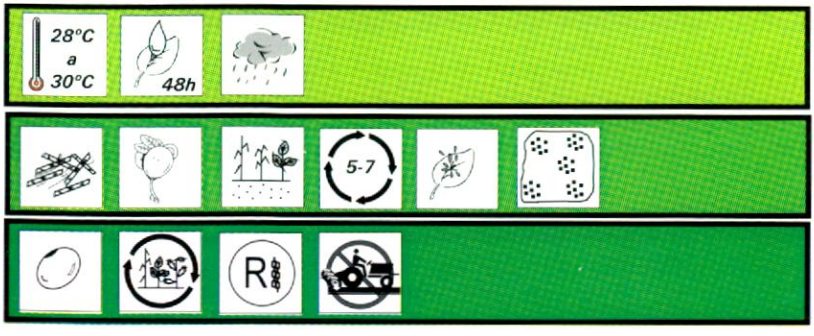
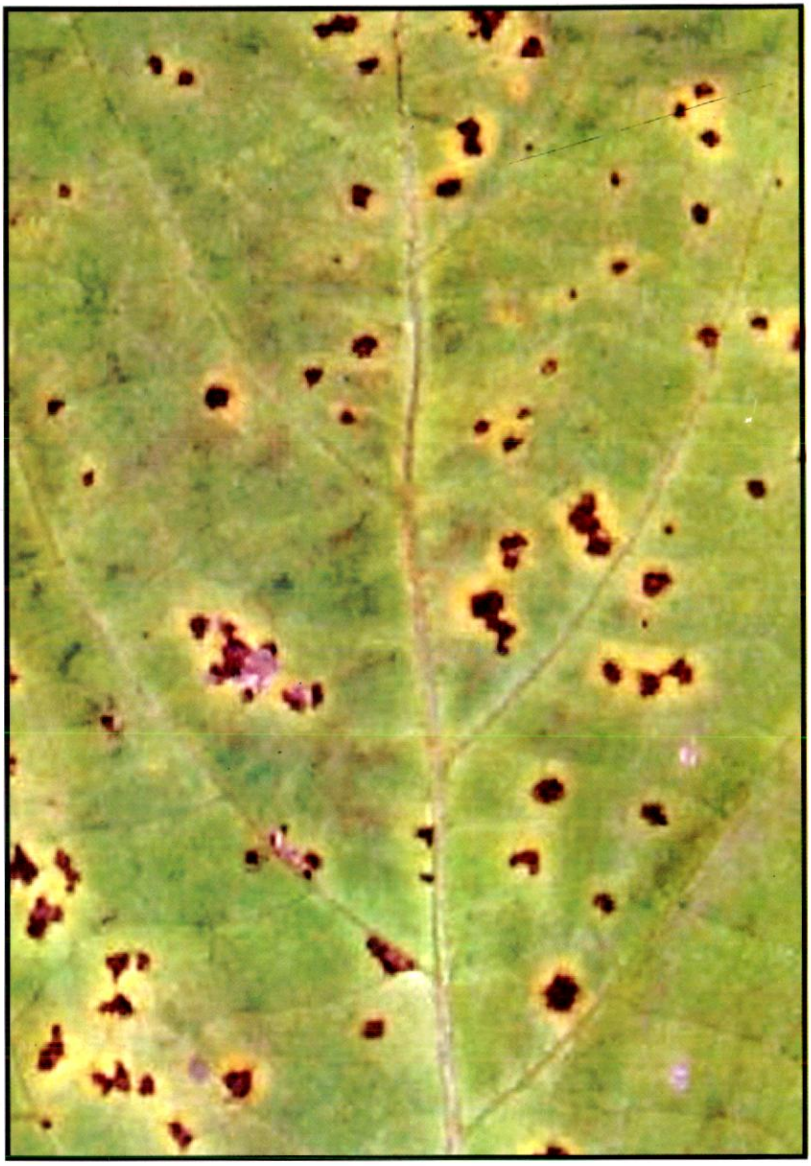
Vanterin Hoste, Kersters & Swings, 1995





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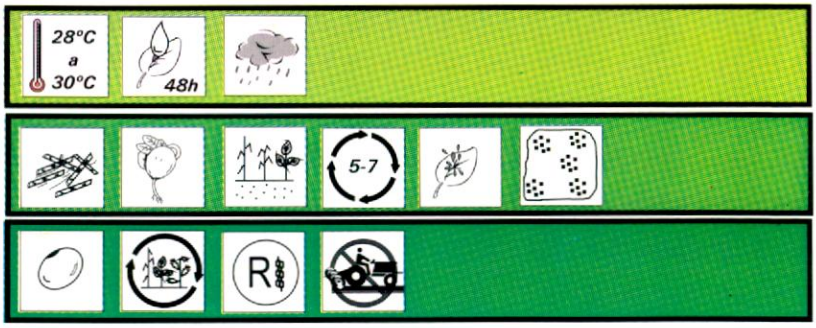

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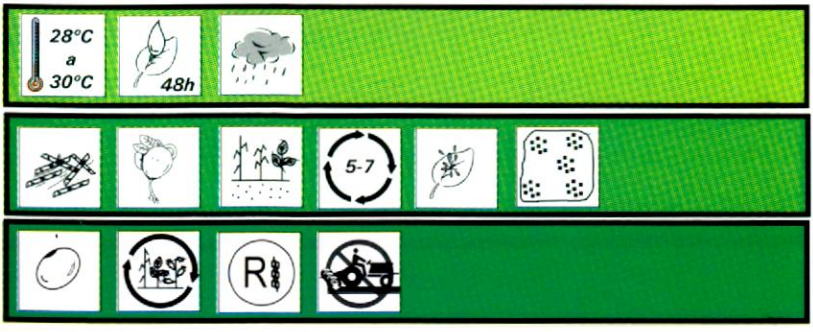
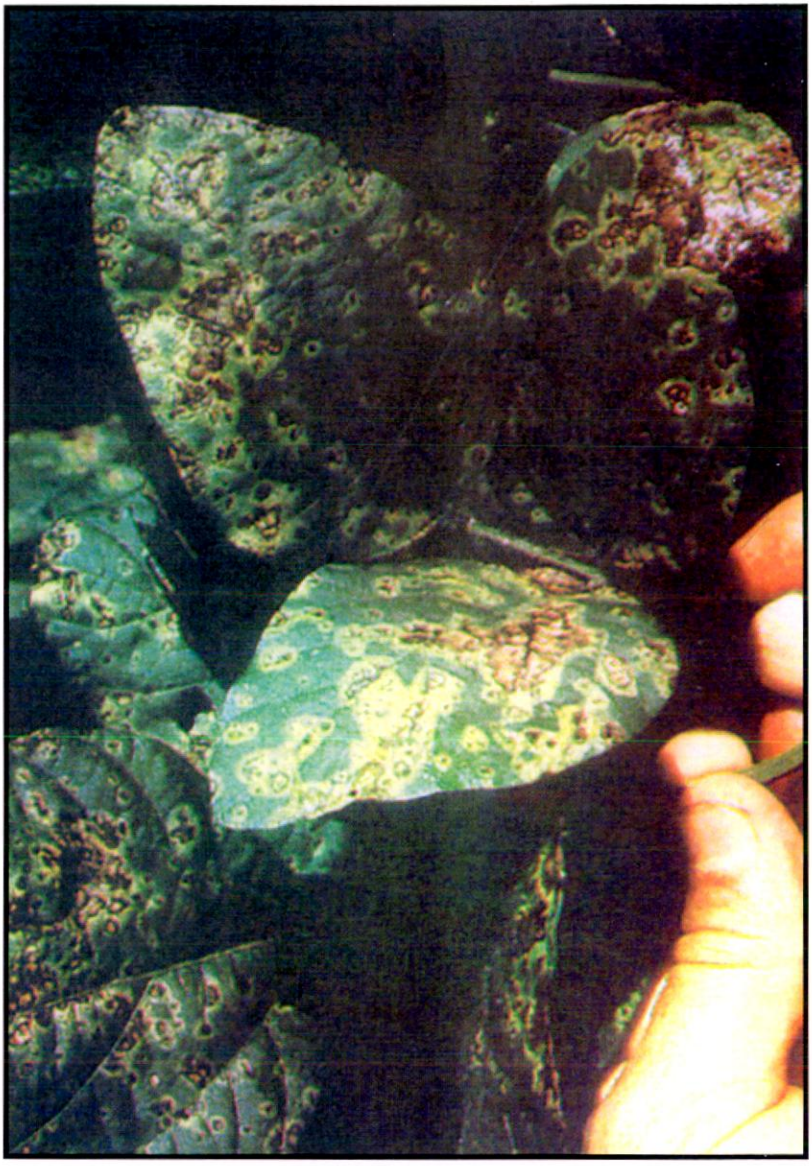
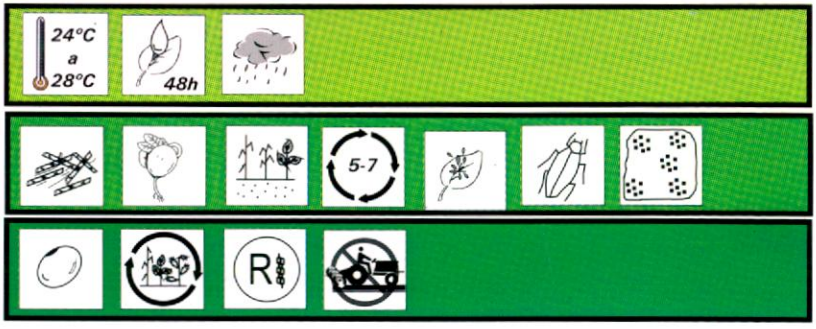
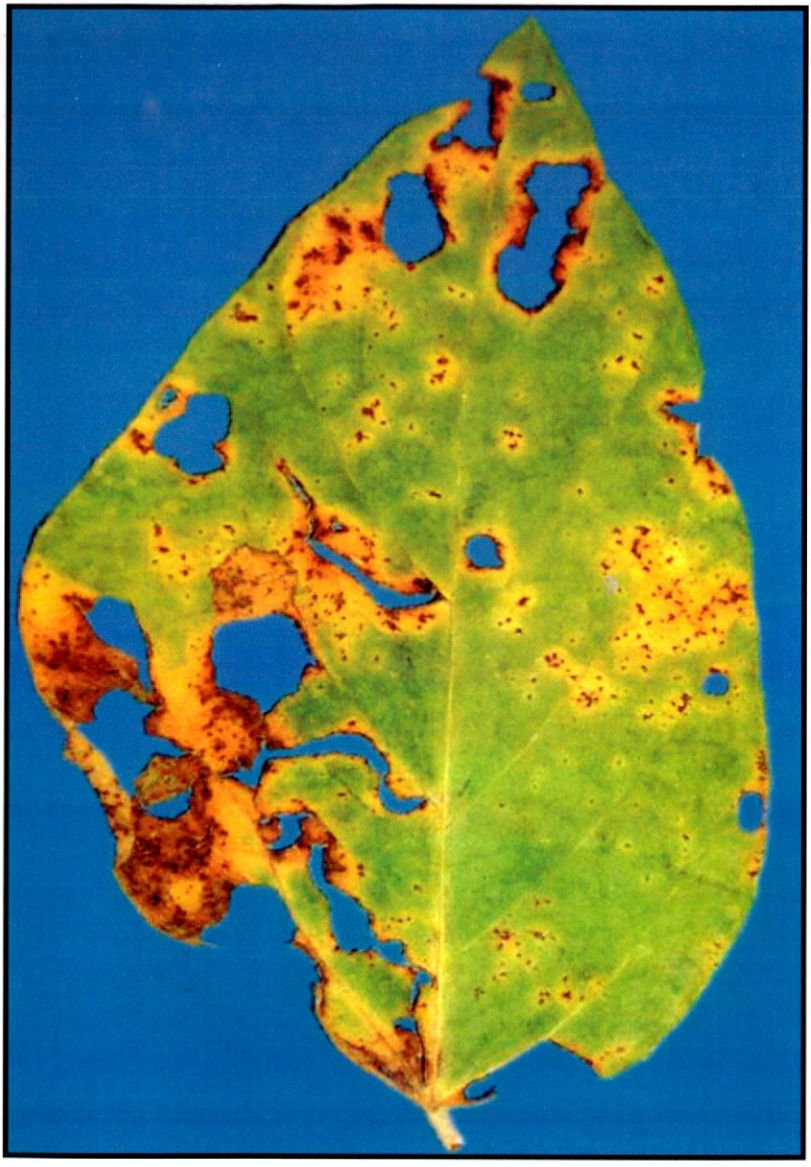
Vanterin Hoste, Kersters & Swings, 1995





Fogo selvagem (sintomas em folhas)
Pseudomonas syringae pv. ***tabaci*** (Wolf & Foster, 1917)
Young et al., Dye & Wilkie, 1978





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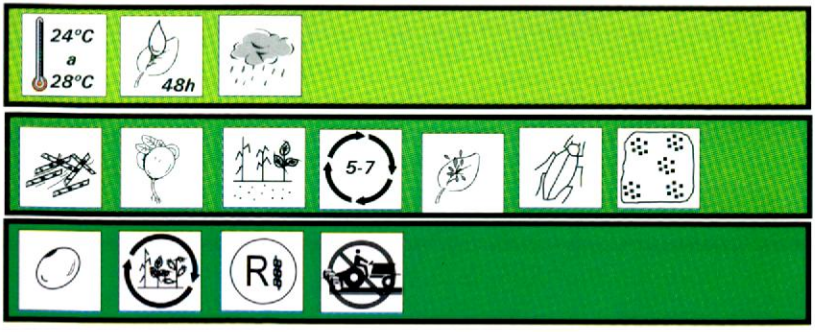
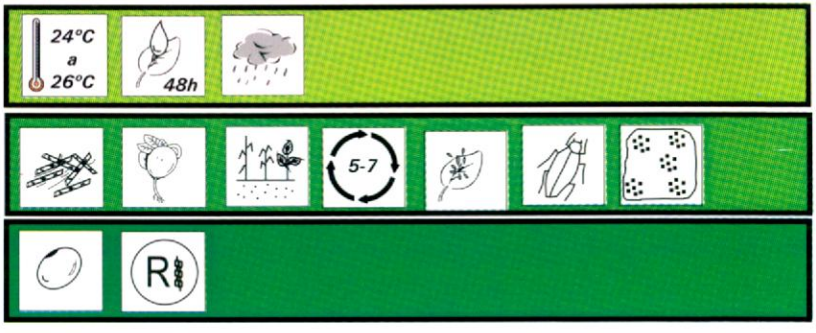


Crestamento bacteriano (sintomas em folhas)
Pseudomonas savastonoi pv. ***glycines*** (Coerper, 1919)
Young et al., Dye & Wilkie, 1978



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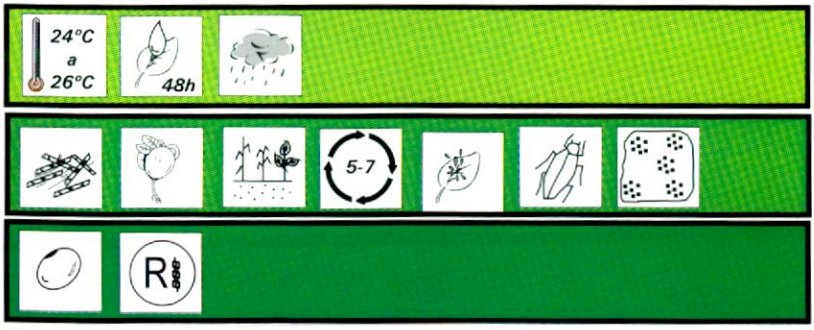

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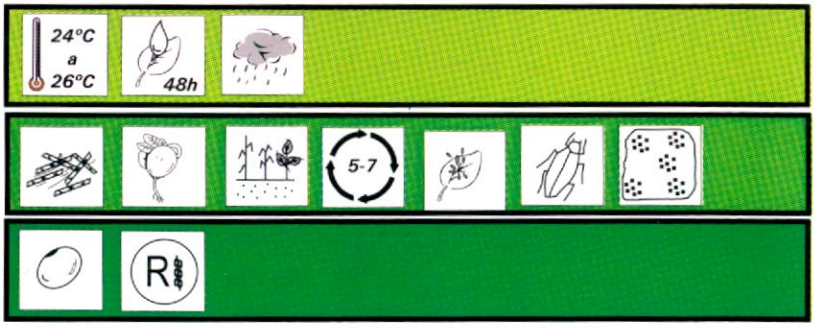
Young et al., Dye & Wilkie, 1978



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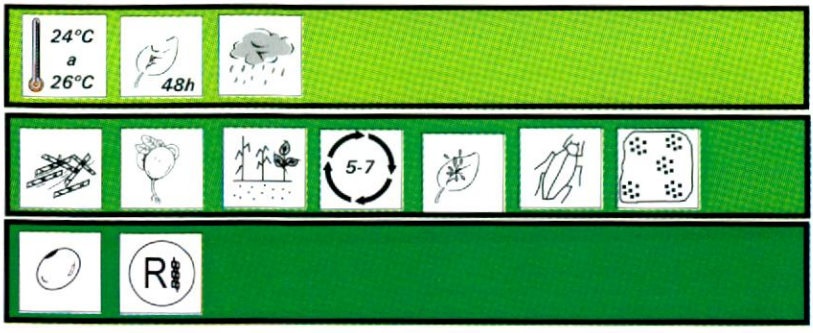

Crestamento bacteriano (sintomas em folhas)
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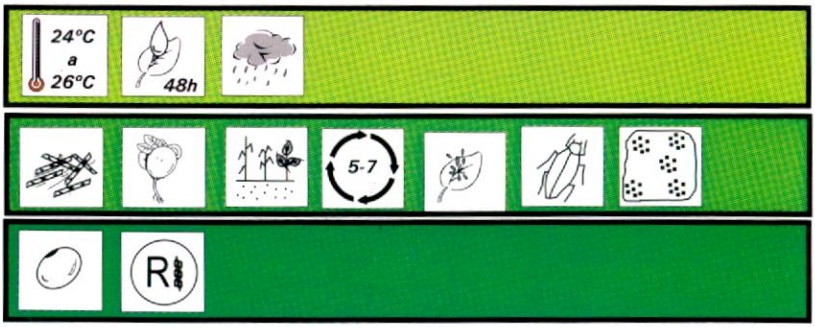

Crestamento bacteriano (sintomas em folhas)
Pseudomonas savastonoi pv. ***glycines*** (Coerper, 1919)
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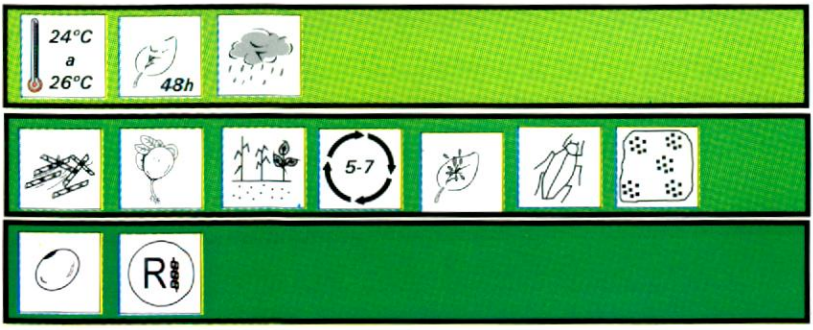
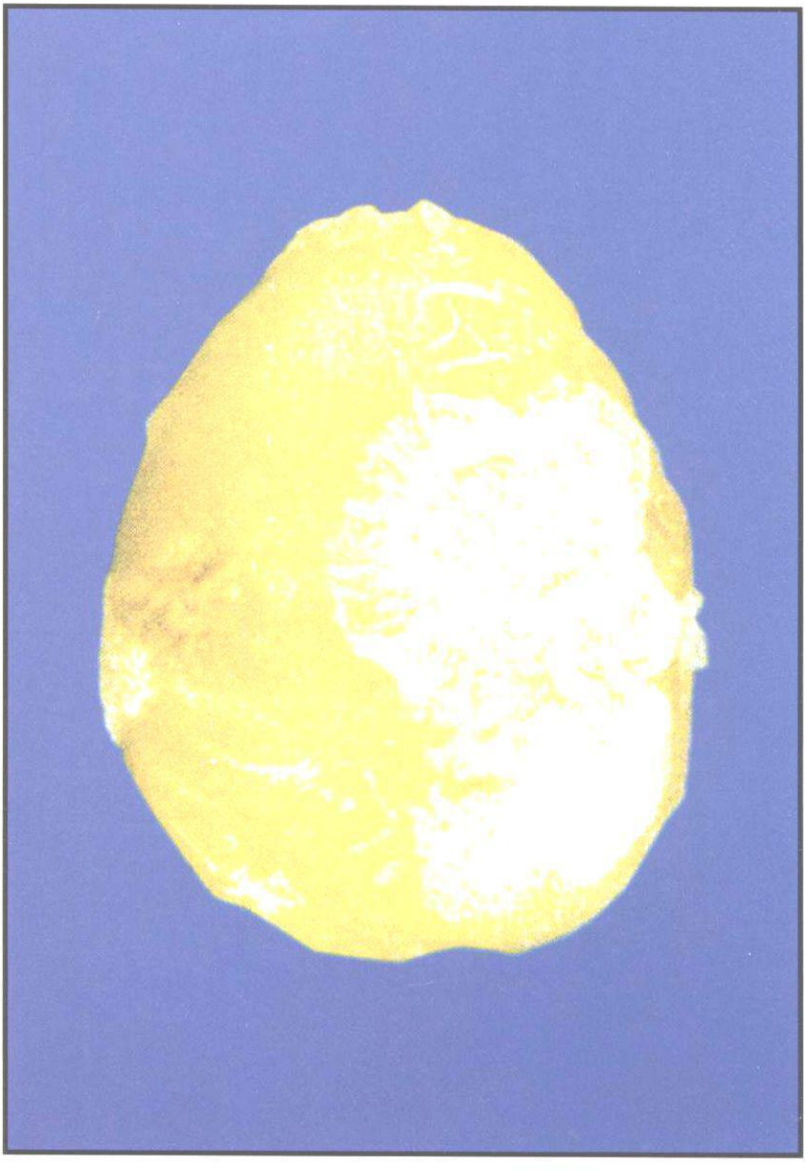


Aspergillus spp.

Penicillium spp.



Bacillus subtilis (Ehrenberg) Cohn

Créditos Fotográficos

Dr. Álvaro Almeida..... 27, 73, 74 e 75
Dr. Erlei Melo Reis..... 58
Dr. Guilherme Lafourcade Asmuz..... 68

Embrapa
Ministério da Agricultura,
Pecuária e Abastecimento
BRASIL
UM PAÍS DE TODOS
GOVERNO FEDERAL