



Universidade de São Paulo - ESP
Escola Superior de Agricultura Luiz de Queiroz - Esalq
Departamento de Fitopatologia e Nematologia - LFN
Disciplina de Fitopatologia Geral – LFT5710

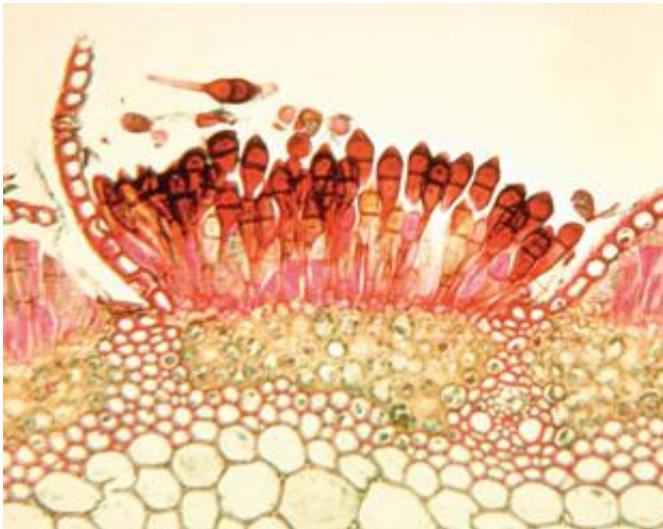
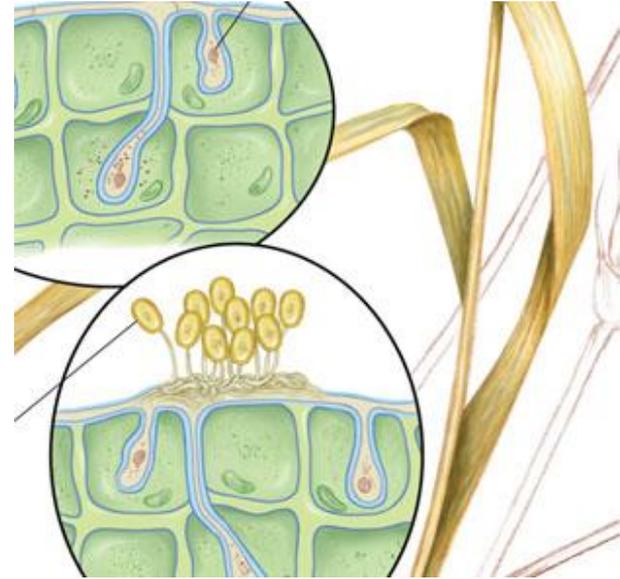


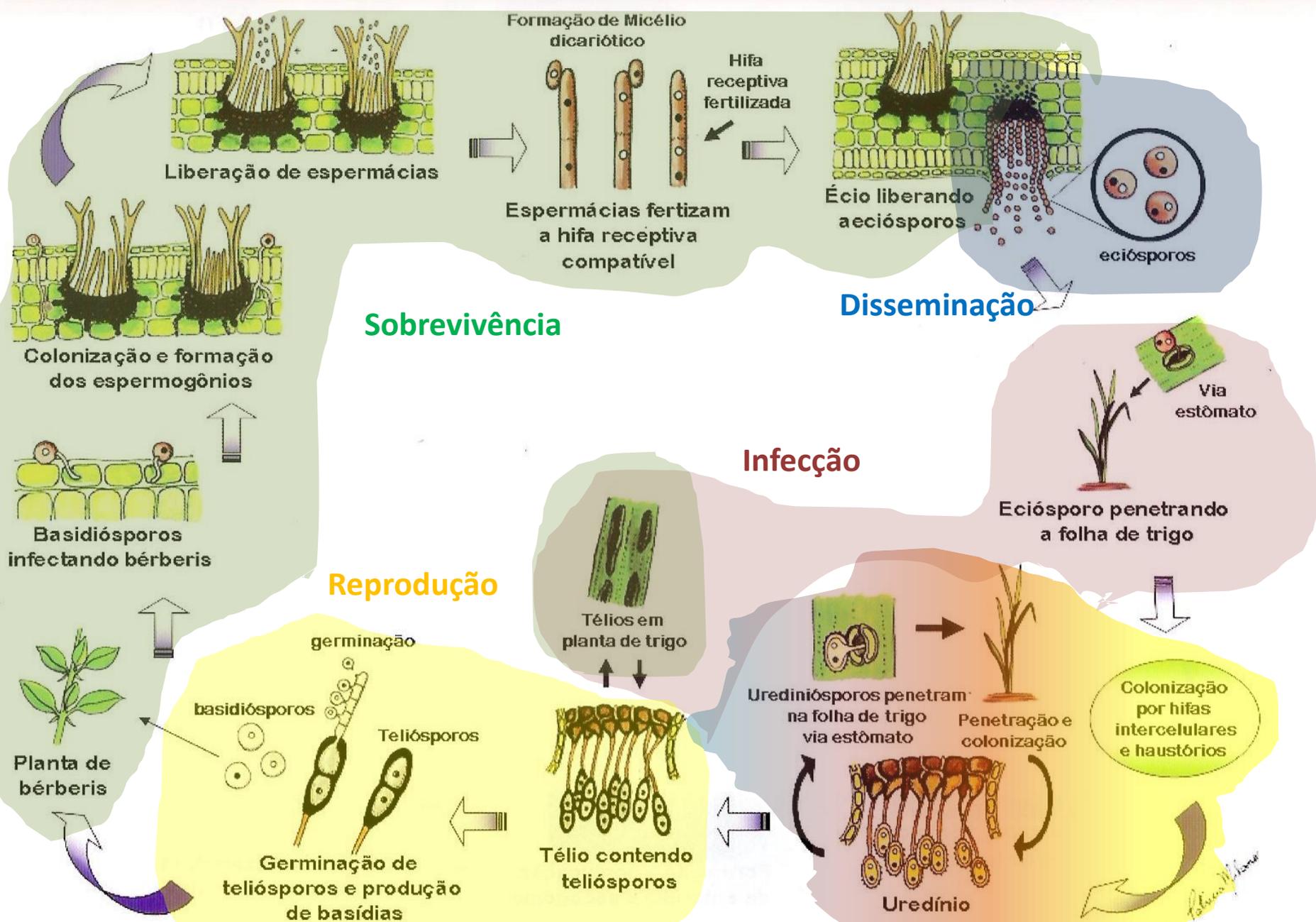
Ciclos de Doenças de Plantas



Prof^ª: Lilian Amorim
Alunas: Barbara Ludwig Navarro
Kelly Pazolini

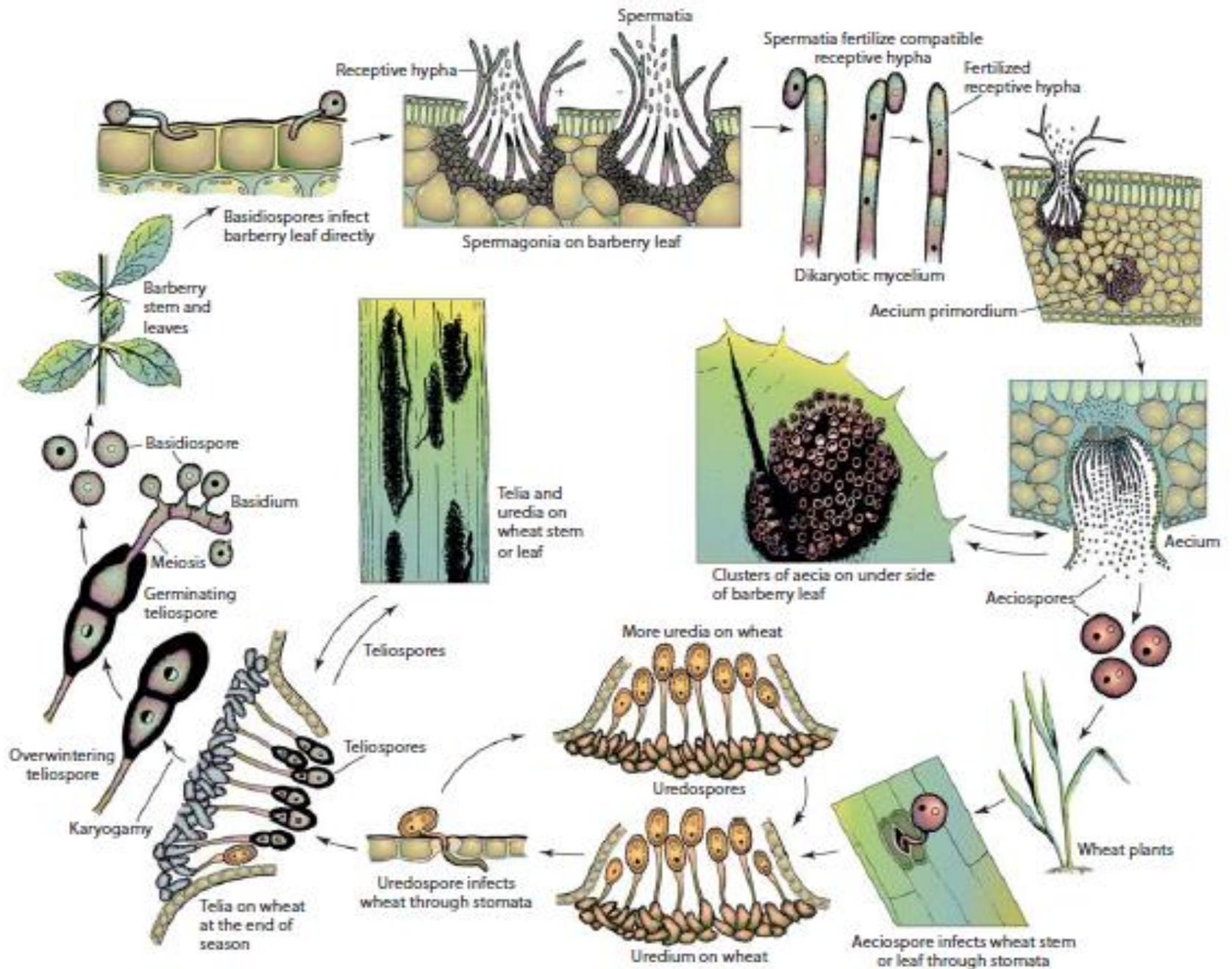
Ferrugem do colmo do trigo (*Puccinia graminis tritici*)



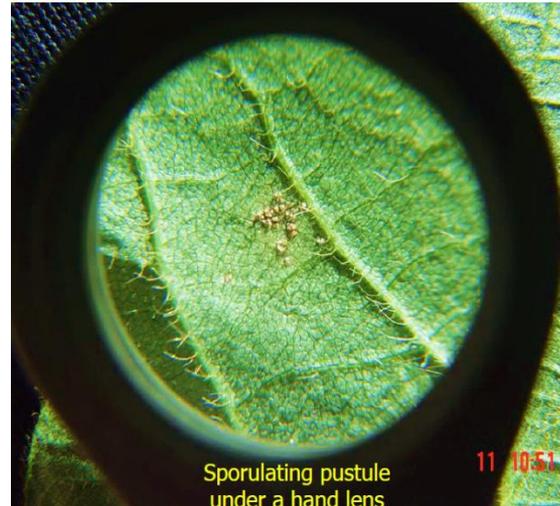
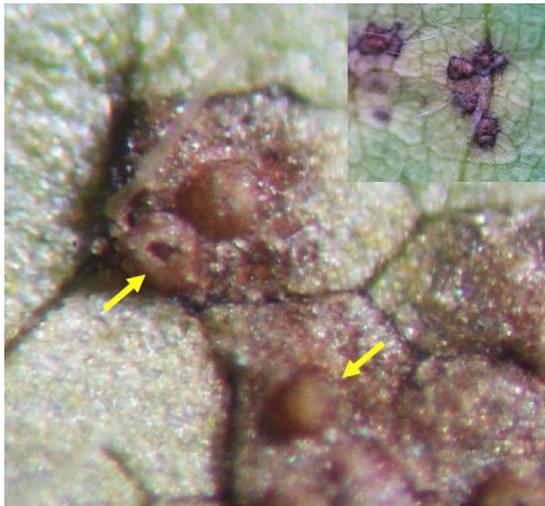
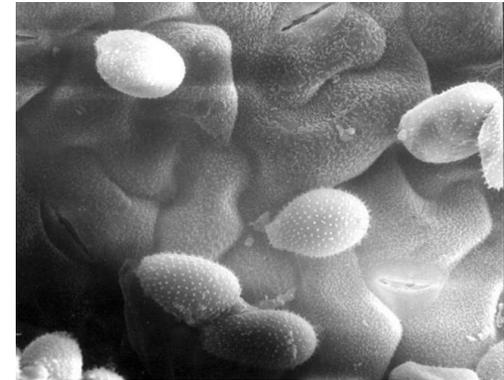
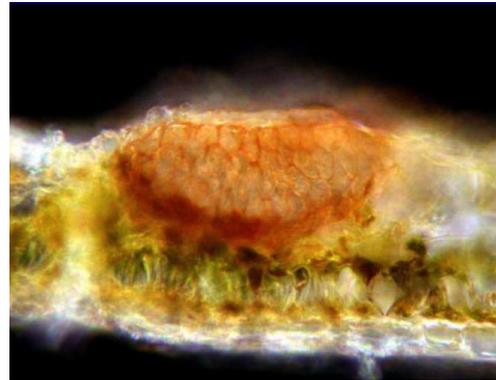
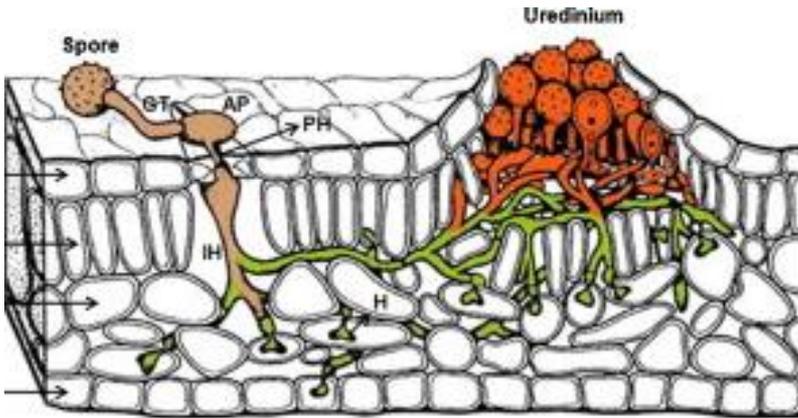


Prancha 28.1 - Ciclo da ferrugem do colmo do trigo causada por *Puccinia graminis* f. sp. tritici.

Colonização



Ferrugem da soja (*Phakopsora pachyrhizi*)



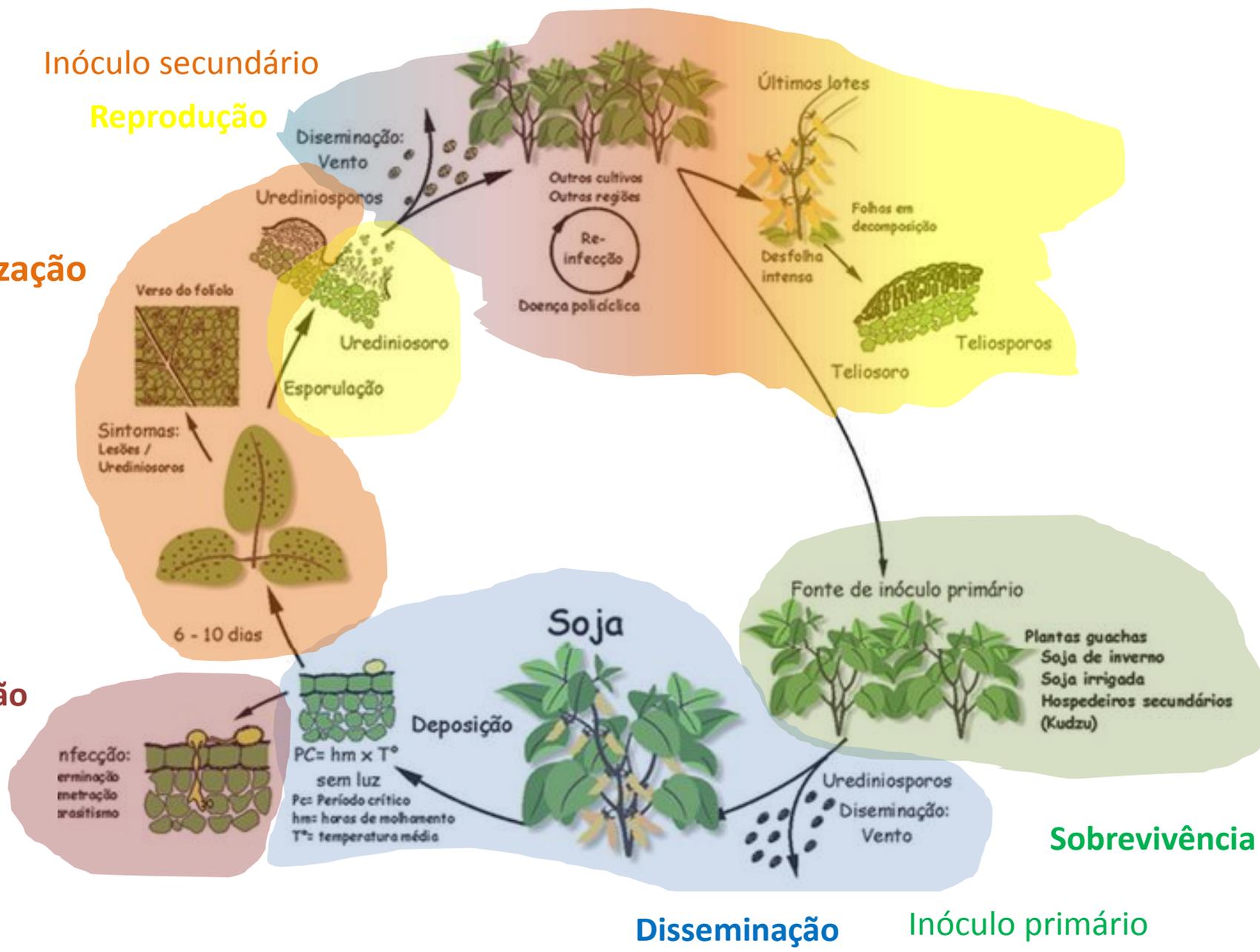
Ciclo secundário

Inóculo secundário

Reprodução

Colonização

Infeção



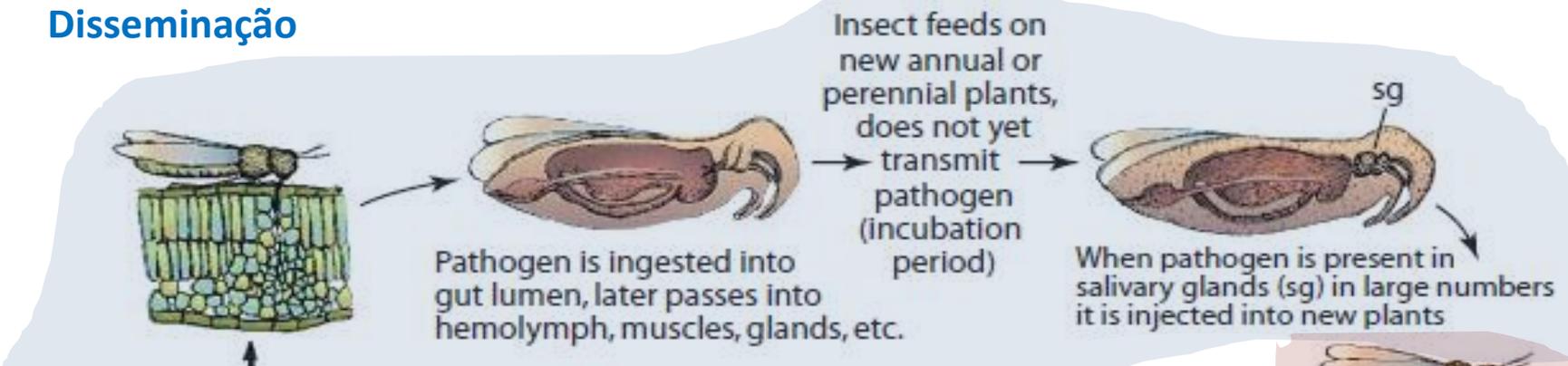
Disseminação

Inóculo primário

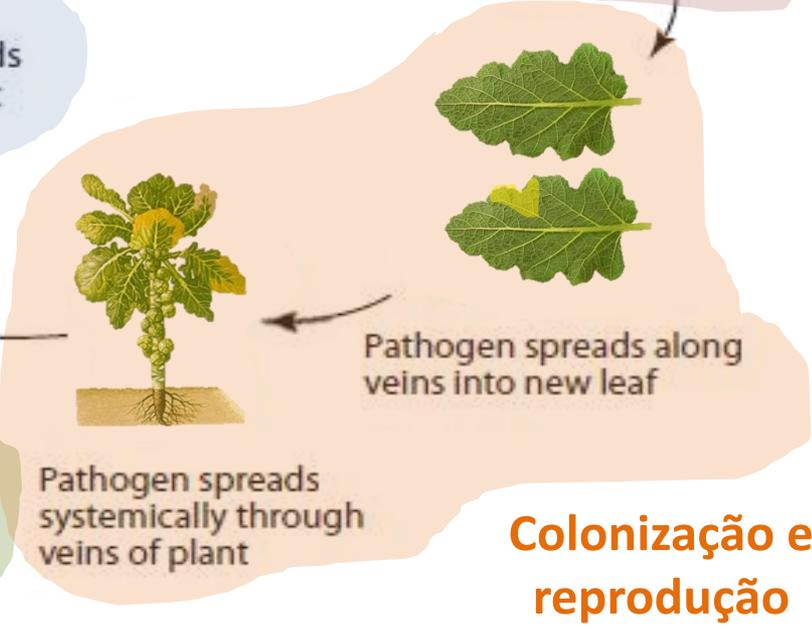
Fitoplasma em brássicas



Disseminação

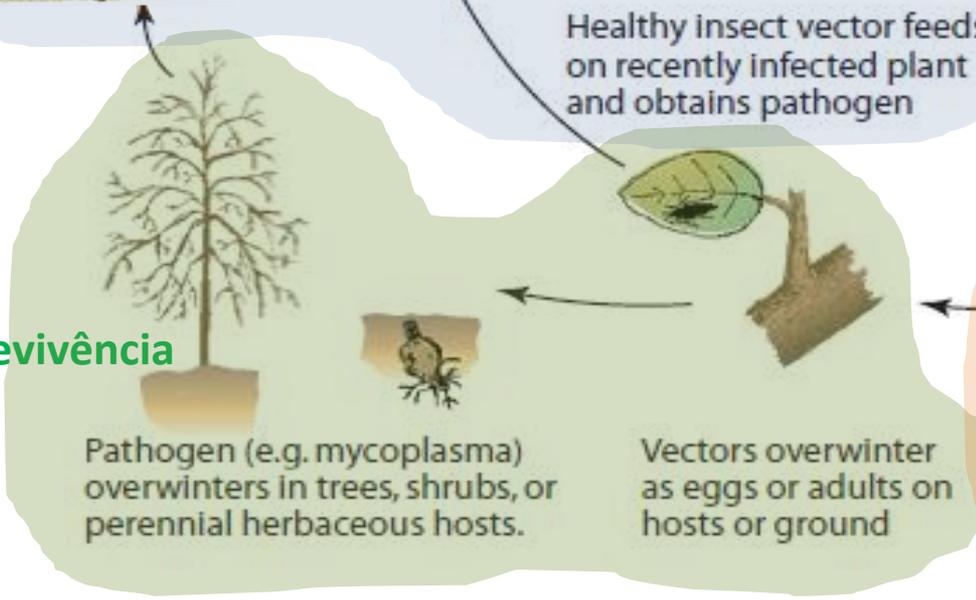


Infecção

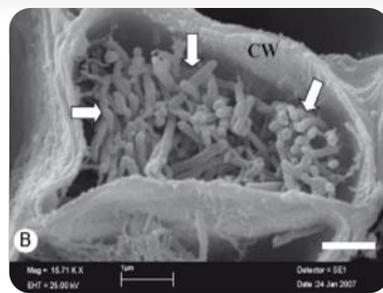


Colonização e reprodução

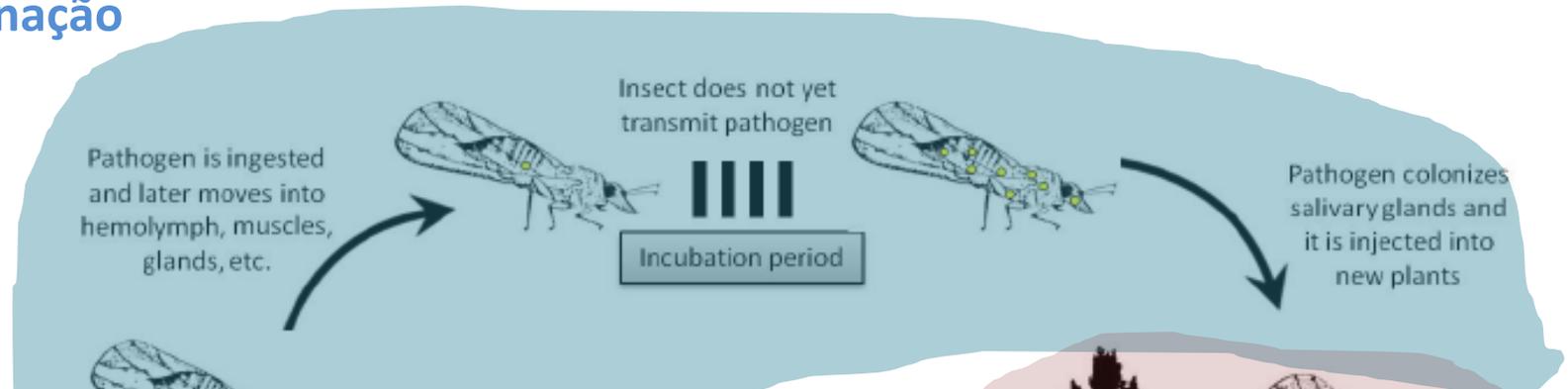
Sobrevivência



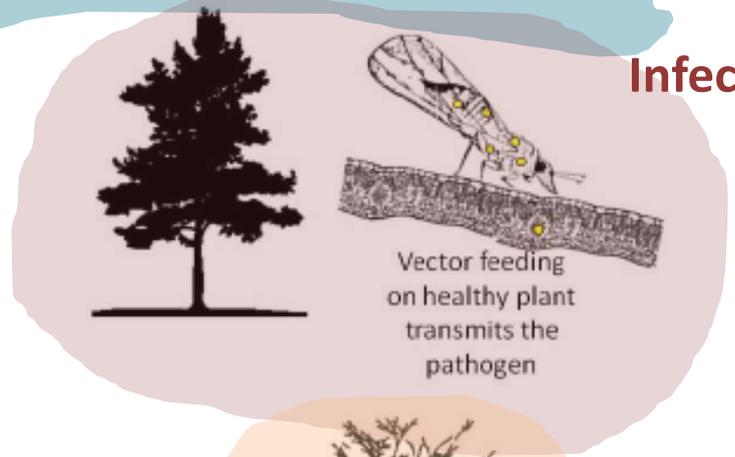
Huanglongbing dos citros ('*Ca. Liberibacter spp.*')



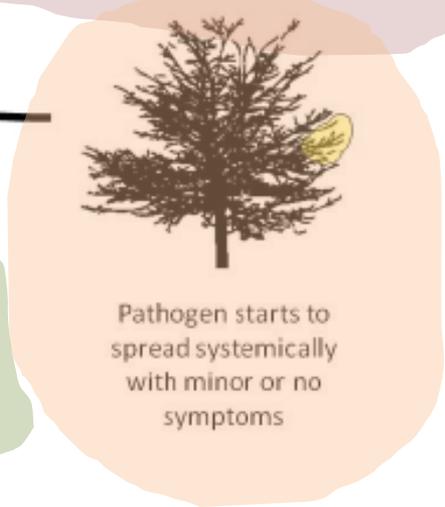
Disseminação



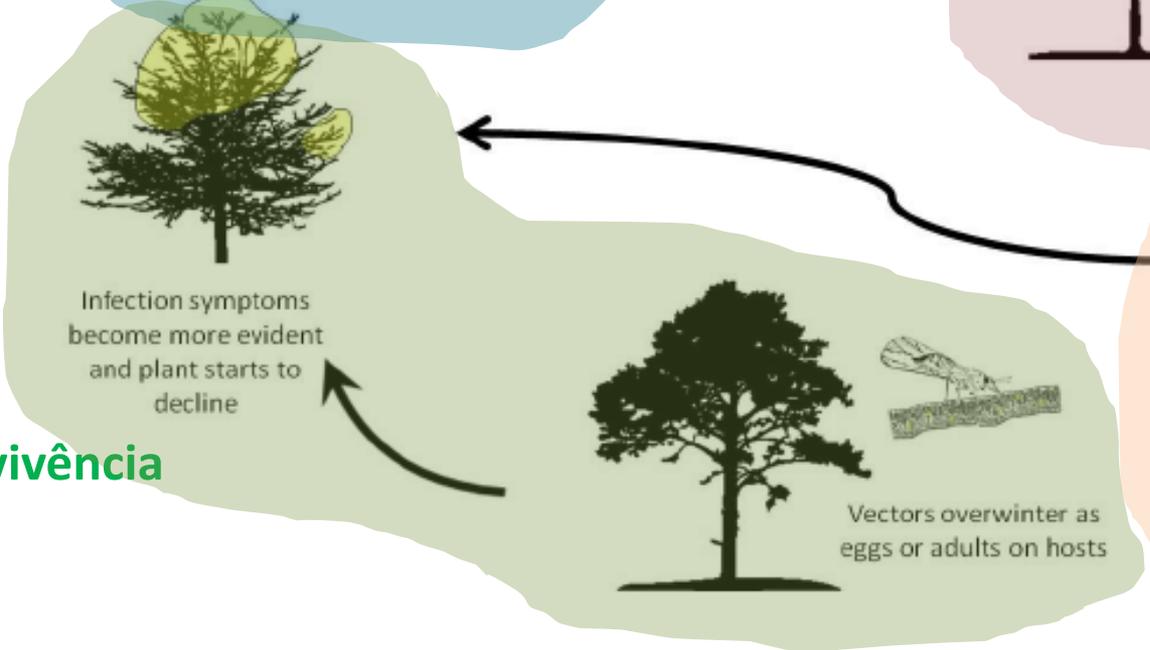
Infeção

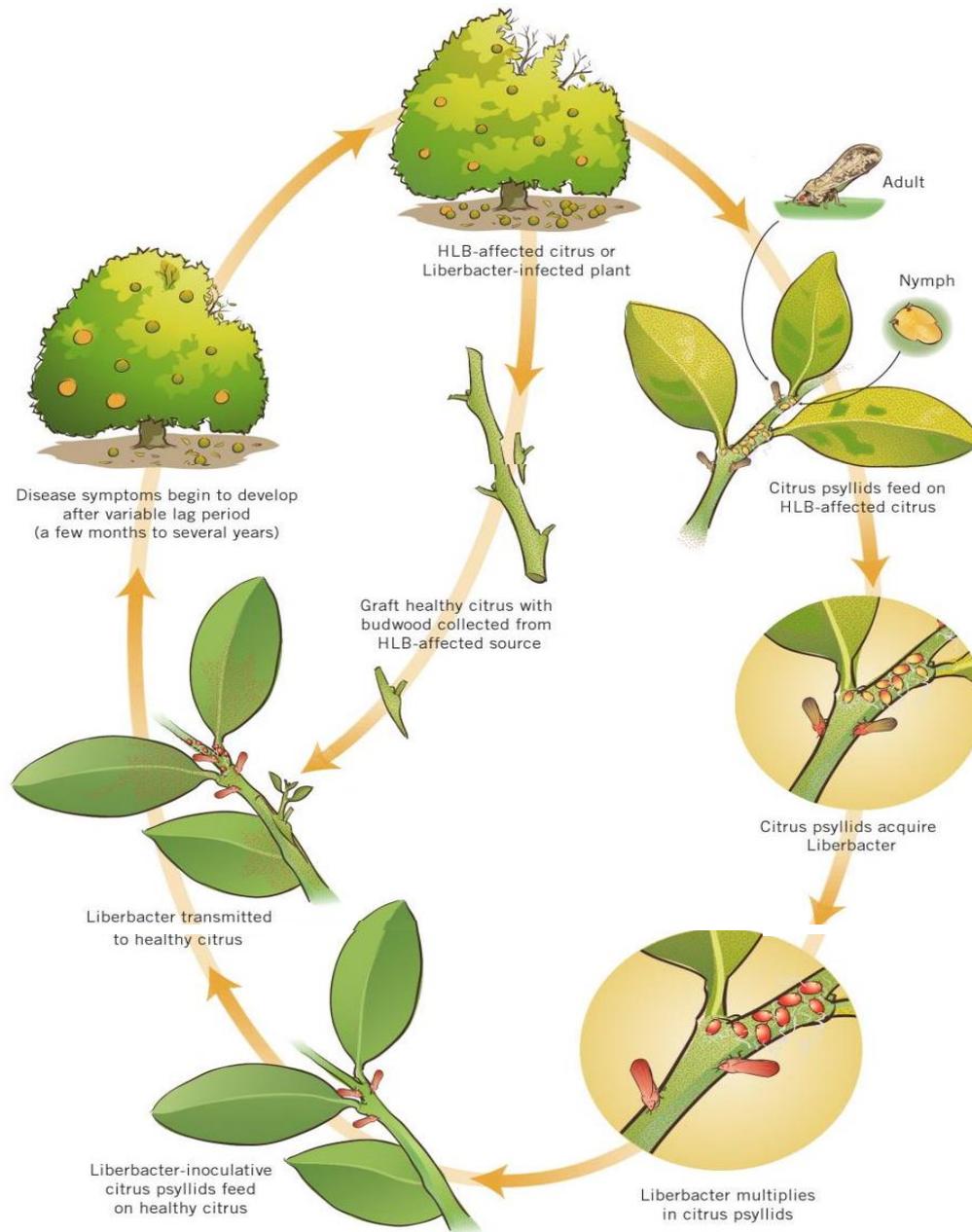


Colonização e reprodução



Sobrevivência





Galha da coroa de rosáceas (*Agrobacterium tumefaciens*)



sweet peppers



peach tree

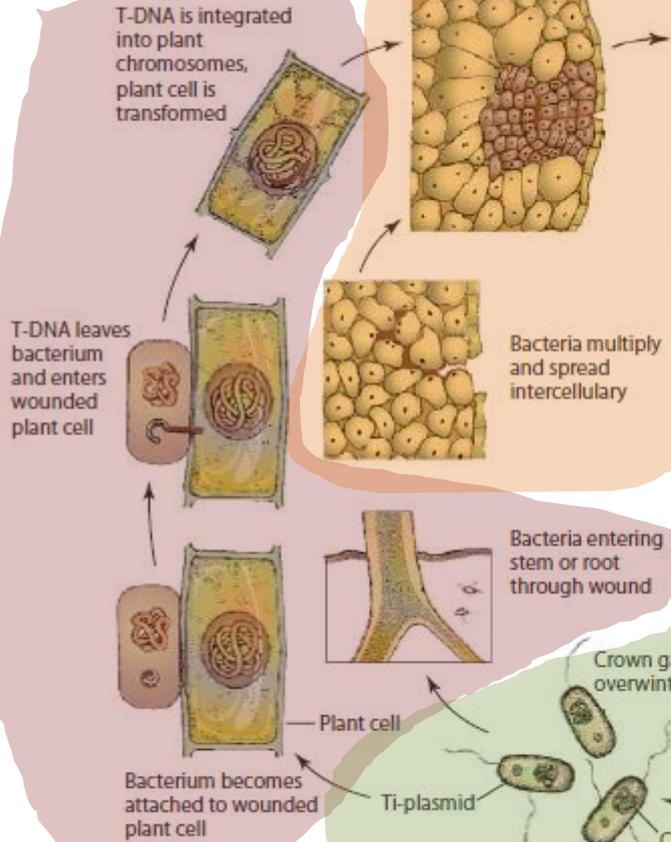


videira



Colonização e reprodução

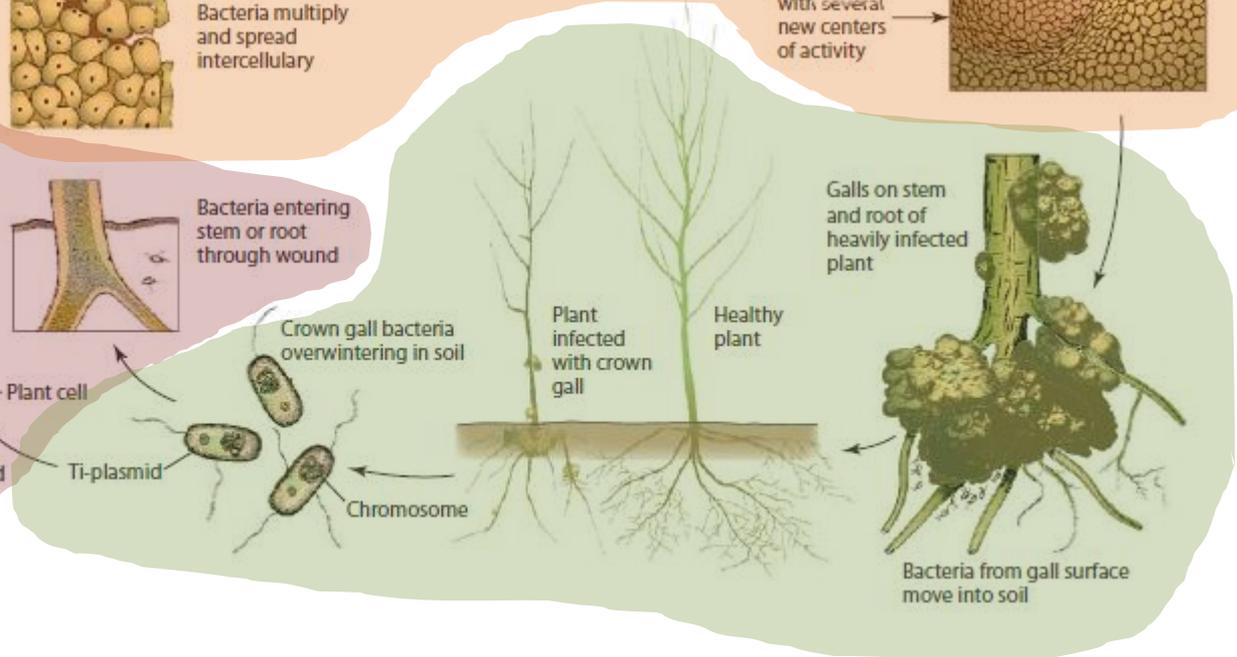
Infecção



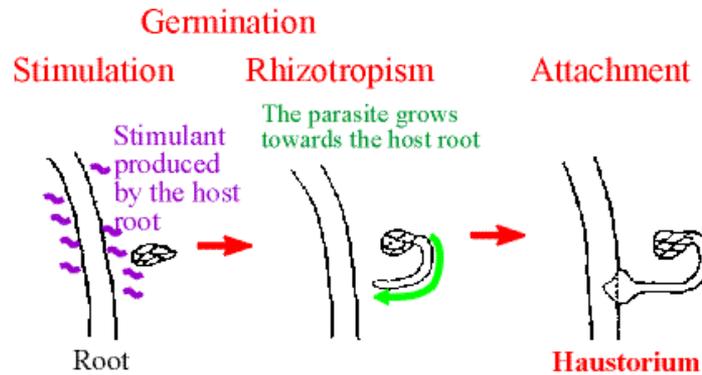
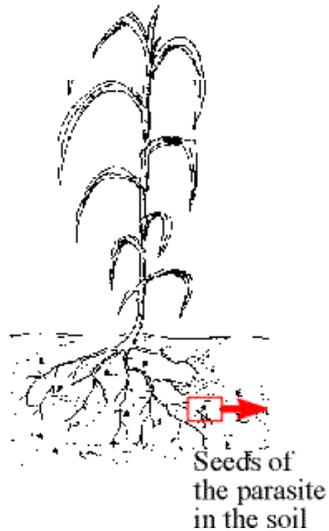
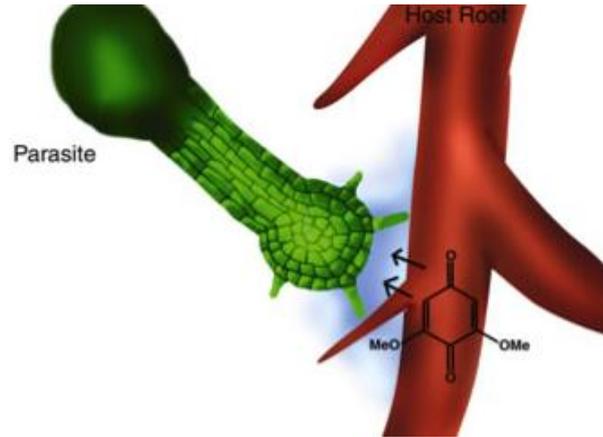
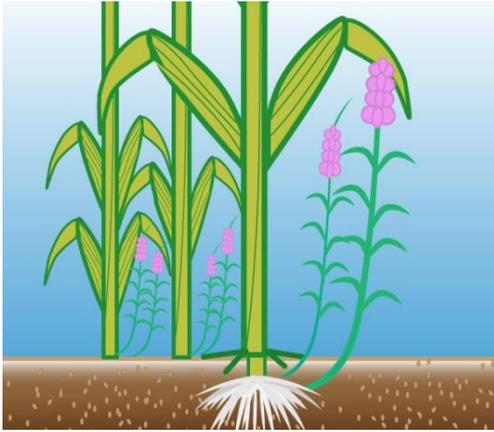
Disseminação

- Respingos da chuva
- Água de enxurrada
- Mudas
- Material de propagação
- Insetos
- Ferramentas

Sobrevivência

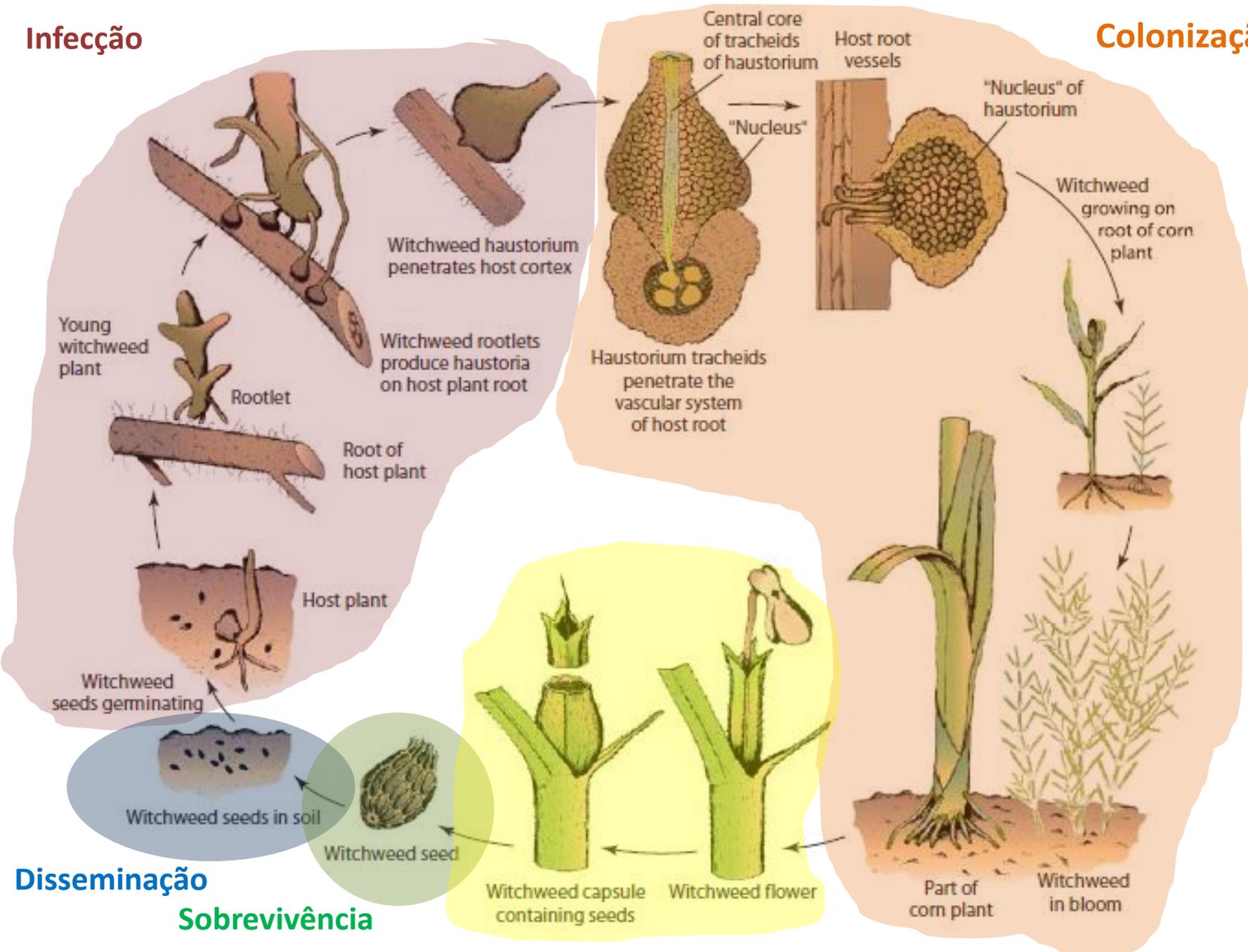


Striga asiatica no milho



Infecção

Colonização



Disseminação

Sobrevivência

Reprodução

Fig. Disease cycle of witchweed (*Striga asiatica*) on corn.

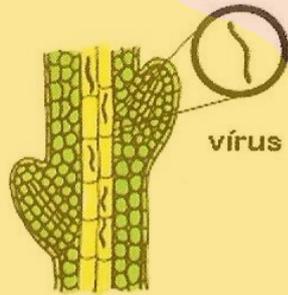
Tristeza dos citros (*Citrus tristeza virus*)



**Reprodução
Colonização**

**Disseminação
Infecção**

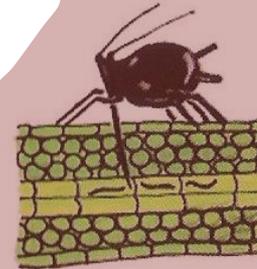
Sobrevivência



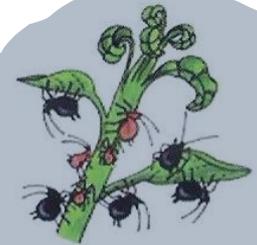
Tecido sadio contendo partículas de vírus (sistema vascular)



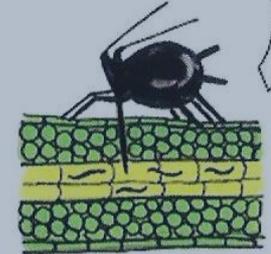
Muda doente produzida a partir de material propagativo doente



Inseto se alimentando e introduzindo vírus no floema



Presença de pulgões em material vegetal sadio



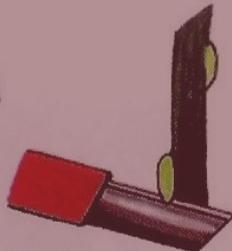
Inseto se alimentando no floema contendo vírus



Presença de pulgões em material vegetal doente



Produção de muda através da enxertia de ramo sobre porta-enxerto



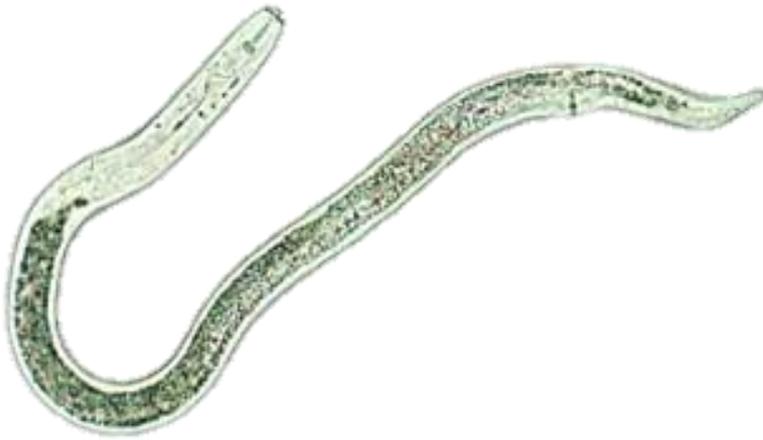
Material propagativo (ramo e gemas)



Planta doente

**Infecção
Disseminação**

Nematóide do cisto da soja (*Heterodera glycines*)

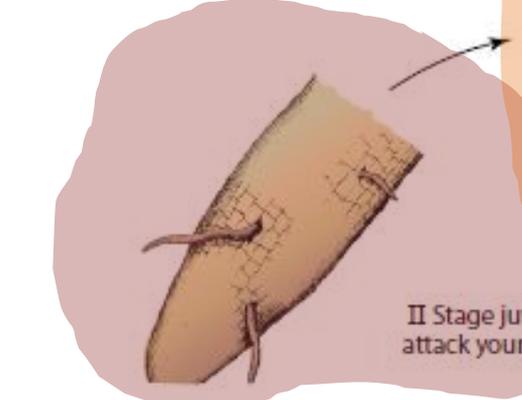
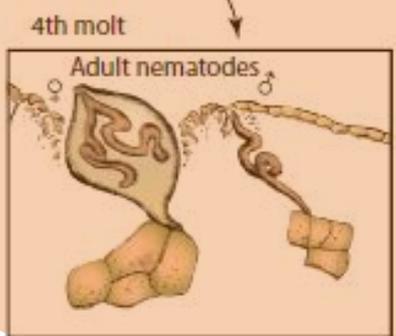
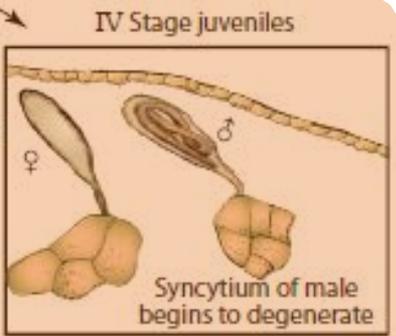
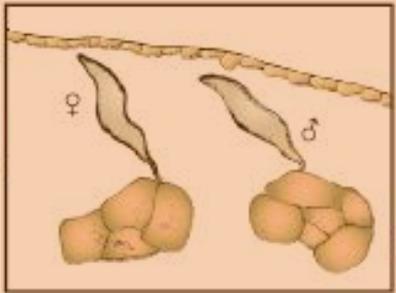
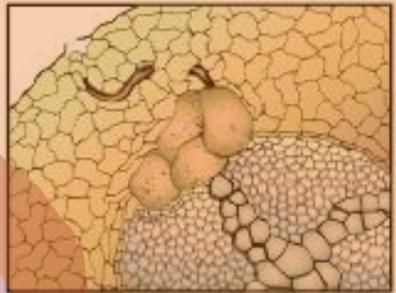


Colonização

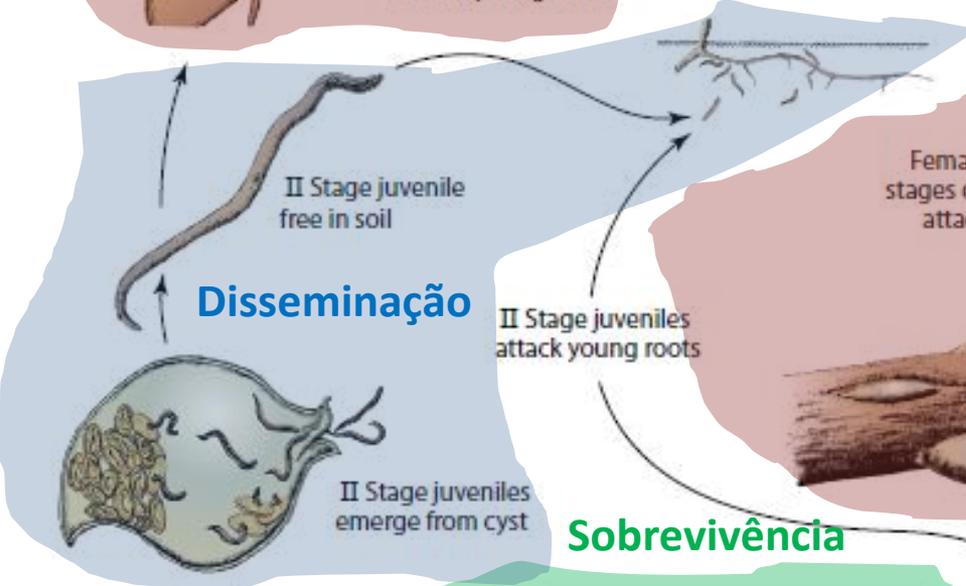
Infecção

II Stage juvenile invade root and cause formation of syncytia

II Stage male and female juvenile feeding on syncytia



II Stage juveniles attack young roots



Disseminação

II Stage juvenile free in soil

II Stage juveniles attack young roots

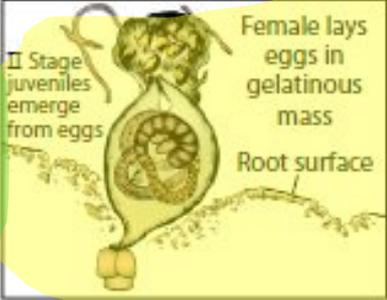


II Stage juveniles emerge from cyst

Sobrevivência

Female cyst filled with eggs still attached to root

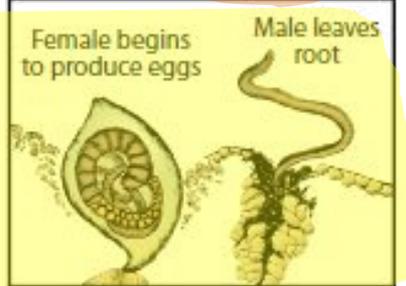
II Stage juvenile in eggs inside brown cyst overwintering in soil



II Stage juveniles emerge from eggs

Female lays eggs in gelatinous mass

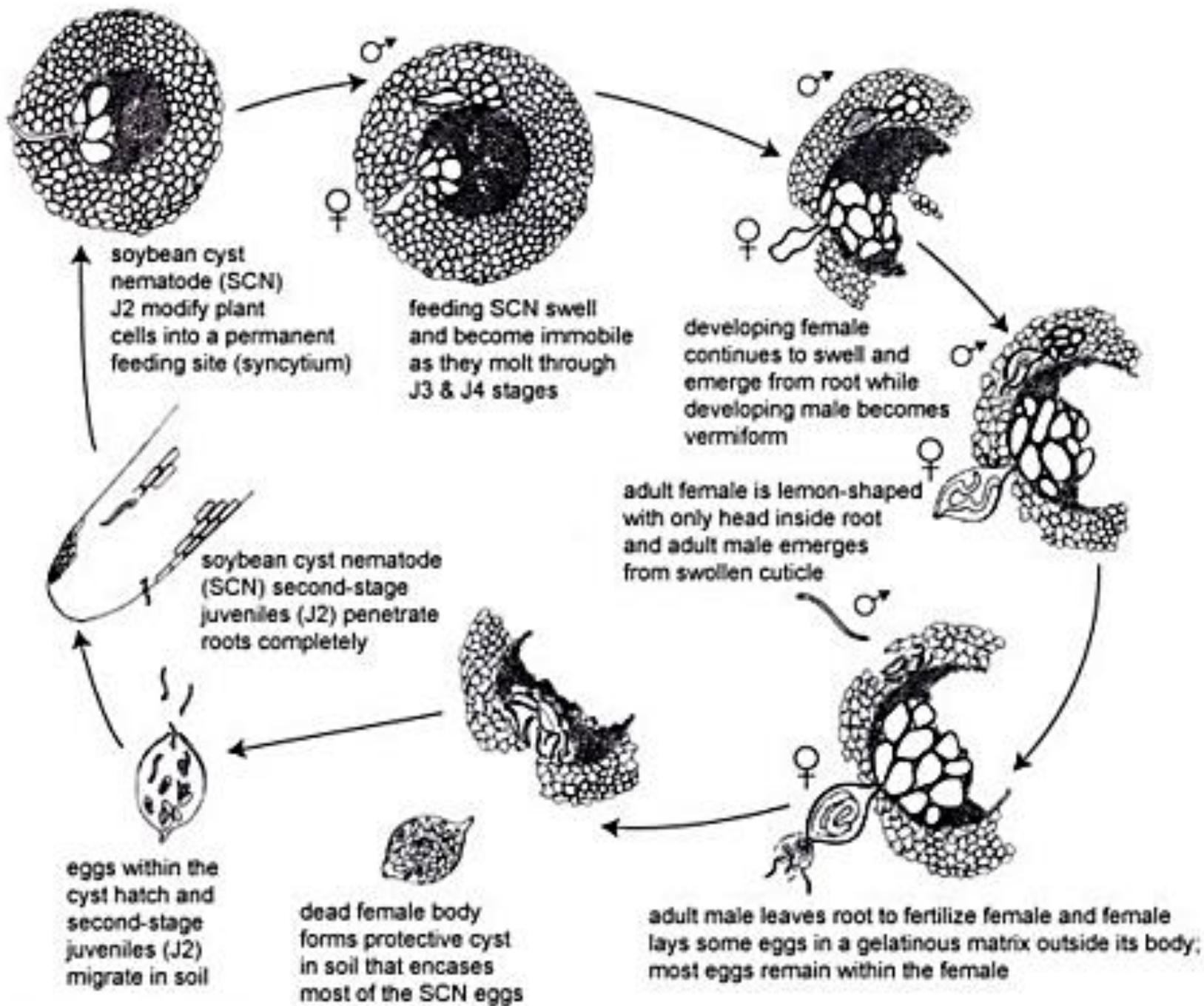
Root surface



Female begins to produce eggs

Male leaves root

Reprodução



Obrigada!



Barbara Ludwig Navarro

Kelly Pazolini