

## **Septoria Leaf Spot (leaf blotch)**

**Pathogen:** *Mycosphaerella graminicola*  
(*Septoria tritici*)

**Hosts:** Mainly wheat, but also barley and most small grains and many grasses can be infected

### **Symptoms:**

- brown oval leaf spots (lesions) which contain the diagnostic small black fruiting bodies (pycnidia) occur on older leaves.
- Several lesions may turn large areas of leaf brown.



### **Importance:**

- Can be the most damaging foliar disease in higher rainfall areas.
- The pathogen can cause significant yield losses every year.

### **Risk factors:**

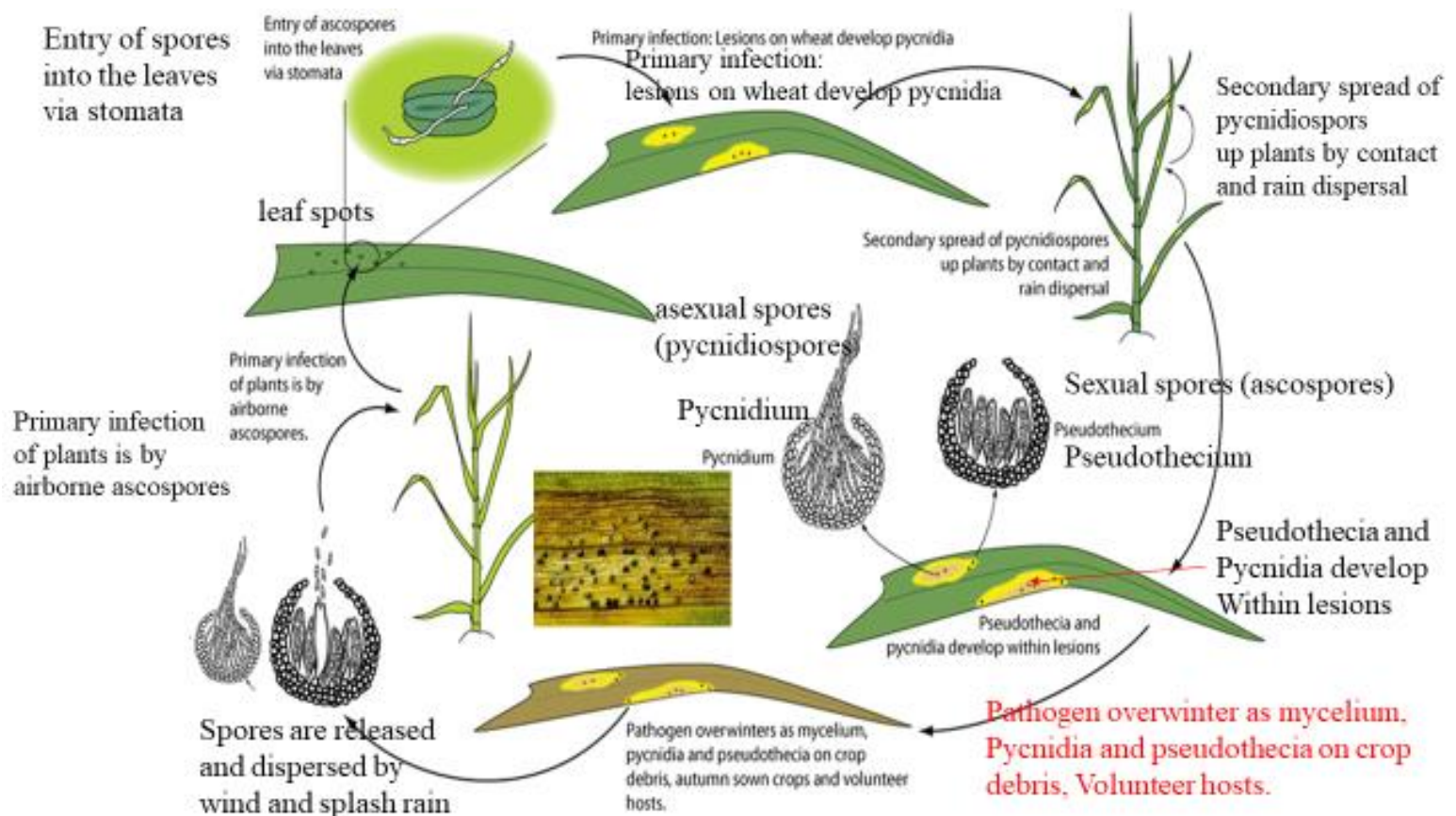
- Susceptible varieties
- Rainfall: high-risk septoria periods occur during ‘splasy’ or prolonged rain.

## Environmental conditions:

- Optimum temperatures are 15–20 °C.
- Symptoms appear after a latent period (14 – 28) days after infection, this period reduces as temperatures rise.
- Requires more than 24 hours of wetness.

## Survival:

Can survive for several years in the form of mycelium, pycnidia and pseudothecia in wheat residues.



## Control:

- Resistant cultivars.
- Pathogen-free seed.
- Crop rotation.
- Destruction of infested straw, stubble, and volunteer wheat.
- Foliar fungicides.
- Fungicide seed treatment.

## Net Blotch:

*Drechslera teres*  
(*Pyrenophora teres*)



## Hosts:

Most current barley varieties are susceptible. Other crops are not affected.

## Symptoms:

### 1. net type symptom

A characteristic "netting" of the dark, chocolate-colored blotches on leaves, sheaths and glumes



### 2. oval spot type



## Importance:

- Very important disease of barley.
- Barley can be attacked anytime during growing season.
- Can cause severe yield losses in years with abundant rains.

## Survival:

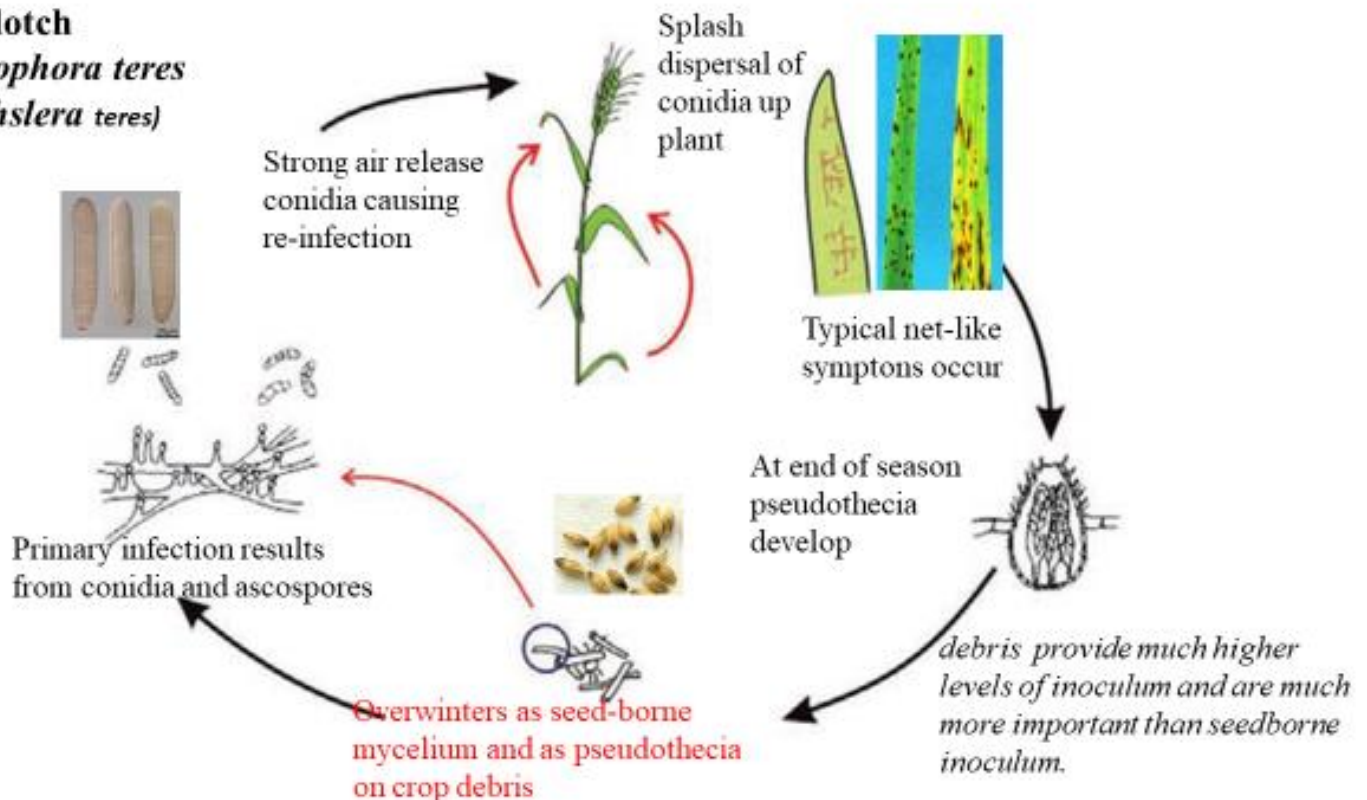
- Overwinters on seeds or crop residue as pseudothecia and in the seeds as mycelium.
- From primary inoculum (barley stubble), the fungus can rapidly spread to new plants.
- Seed-borne infection is less important and is transmitted from one geographical area to another.

## Environmental conditions:

- The optimum temperature for spore production and infection is 15-25 °C.
- Spore release occurs at near 100 % relative humidity.
- Infection of barley leaves is greatest when humid, moist conditions persist for 10 to 30 hours or longer.

### Net Blotch

*Pyrenophora teres*  
(*Drechslera teres*)



## **Control:**

- 1- Seed treatments.
- 2- Fungicide sprays.
- 3- Resistant varieties
- 4- Crop rotation.
- 5- Manage crop residues when not rotating crops.

## Wheat Streak Mosaic Virus (WSMV)



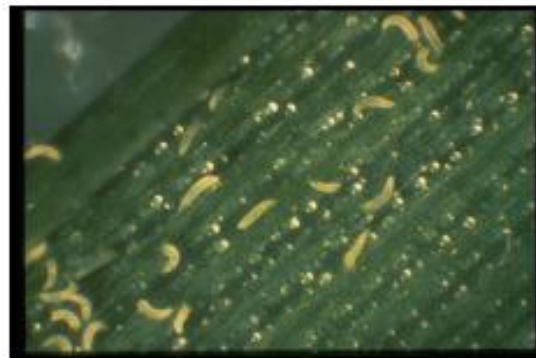
## Disease Symptoms:

- 1- Plants can die prematurely or fail to grow, becoming stunted .
- 2- Have spotted and yellow streaked leaves.
- 3- Heads can be sterile or can contain small to shriveled grain.



## Hosts:

Wheat, some grasses.



## Disease Spread:

The mites, known by the scientific name of *Aceria tulipae* carry the virus from diseased to healthy plants.

## **Losses From WSMV:**

may cause losses that range from minimal to complete crop failure.

### **Yield loss is dependent on:**

- The growth stage at the time of the infection.

*(The earlier the growth stage at which infection occurs, the greater the loss).*

- Temperature and moisture.

Warm, dry conditions stress the crop and favor mite development and movement, and increase losses.

## **Control:**

- Control volunteers, grassy weeds and mites.
- Seed treatment insecticide serves as the first line of defense.
- Cultural practices (planting dates).

Early planting may allow crop to develop prior to an arrival of large populations of aphids which may be carrying the virus.



## Root Lesion Nematodes

- Round worms that parasite agricultural crops in every part of the world.

Two species of root lesion nematode are damaging to wheat:

- *Pratylenchus thornei*  
and
- *Pratylenchus neglectus*



[Wheat Gall Nematode](#)

## Symptoms:

- Roots are thinner and less branched than normal
- stunting,
- yellowing of older leaves
- reduced tillering
- loss in kernel weight.



Discolouration of roots and reduction in lateral root growth



Patchiness, stunting and yellowing of cereal

## **Importance: (Yield losses)**

- Winter wheat losses can be up to 37 %
- Greatest losses occur in low-rainfall, annually cropped wheat.

## **Penetration:**

The parasitic nematode penetrates and moves into plant root cells using its sharp, hollow stylet



## **Survival:**

They can enter a resting stage when field conditions are dry and hosts are not available.

They revive (recover) under favorable conditions.

## **Spread:**

Are dispersed from field to field on farm equipment, shoes, animals and by wind.

## **Control:**

- Rotations with resistant or non-host.
- Resistant crops suppress multiplication and may improve yields
- Healthy soils and good nutrition
- Control of host weed species and crop volunteers is important.

*T.A.*