

How to assess cereal diseases

Knowing the levels of disease in your crops is essential to inform fungicide and future variety choice. It is important to leave an area untreated with fungicide with which to compare the treated area: this should be in an area representative of the crop rather than under a tree or at a gateway.

For more information, visit: <https://ahdb.org.uk/cereal-dmg>

Disease is assessed as percent leaf area infected. There are various ways to do this; whichever way you choose the most important thing is to remain consistent. The below can be used as a guide.

DEFINITIONS

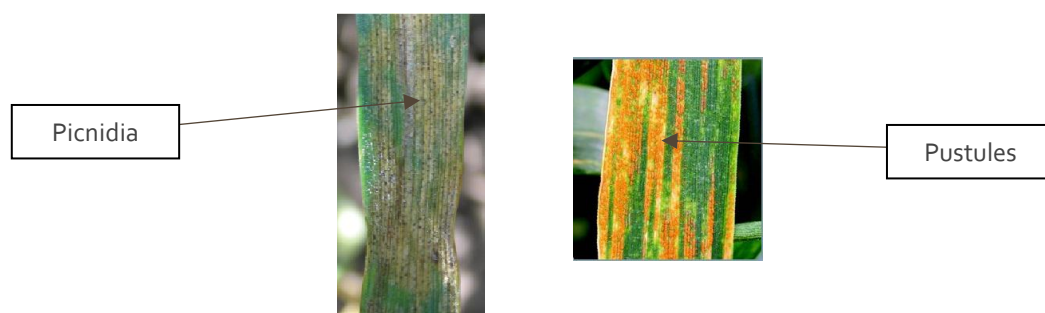
- Chlorosis = yellowing of leaf
- Necrosis = dead leaf
- Foci = small area of crop with high infection
- Pustule = a mass of spores
- Lesion = a localised area of diseased tissue

NOTE

- Assess disease regularly throughout the season, and at least before each fungicide timing.
- Assess at least 1 field of each variety.
- Record the results using the template below.

DISEASE IDENTIFICATION

- Yellow and brown rust will have pustules
- Septoria will have picnidia
- If unsure, assess percent green leaf area



FOLIAR DISEASE ASSESSMENT KEY

- 1) Examine top 4 leaves.
- 2) Ignore all naturally senescent leaf tissue.
- 3) Include all chlorosis and necrosis due to disease.
- 4) Record % infection; use interpolated values (e.g. 3%) if necessary.
- 5) If foci present, record average over the area as a whole.

% infection	MILDEW	YELLOW RUST	BROWN RUST
0	No infection observed		
0.1	3 pustules per tiller	1 stripe per tiller	25 pustules per tiller
1	5 pustules per leaf	2 stripes per leaf	100 pustules per leaf
5	2 lower leaves appear ¼ infected	Most tillers infected but some top leaves uninfected	Top leaf - numerous pustules but leaves appear green overall
10	2 lower leaves appear ½ infected	All leaves infected but leaves appear green overall	Top leaf - pustules sufficiently dense to give brown appearance in patches
25	Leaves appear ½ infected ½ green		
50	Leaves appear more infected than green		
75	Very little green leaf tissue left		
100	Leaves dead - no green tissue left		

% infection	SEPTORIA	RHYNCHOSPORIUM	NET BLOTCH
0	No infection observed		
0.1	1 lesion per 10 tillers	1 lesion per 10 tillers	1 small lesion per 10 tillers
1	2 small lesions per tiller	1 lesion per tiller	1 small lesion per tiller
5	Small lesions beginning to form areas of dead tissue across width of leaf	Discrete lesions on most tillers, about 2 per leaf	2 lower leaves appear ¼ infected. Other leaves - few lesions
10	2 lower leaves - large areas of diseased tissue some covering 1/3 of leaf	Lesions joining but leaves appear green overall	2 lower leaves appear ½ infected. Other leaves - numerous lesions
25	Leaves appear ½ infected ½ green		
50	Leaves appear more infected than green		
75	Very little green leaf tissue left		
100	Leaves dead - no green tissue left		

NIAB-TAG, Cambridge CB3 OLE

EXAMPLES



Disease Record Sheet

Field name:	Variety:
Recording date:	Growth stage:
Date last sprayed with fungicide (if applicable):	

		% septoria	% yellow rust	% brown rust	% mildew	Eyespot (Y/N)	Head blight (Y/N)	% whiteheads	Record any other diseases seen
Untreated area	Observation 1								
	Observation 2								
	Observation 3								
	Observation 4								
Treated area 1	Observation 1								
	Observation 2								
	Observation 3								
	Observation 4								
Treated area 2	Observation 1								
	Observation 2								
	Observation 3								
	Observation 4								
Treated area 3	Observation 1								
	Observation 2								
	Observation 3								
	Observation 4								
Treated area 4	Observation 1								
	Observation 2								
	Observation 3								
	Observation 4								