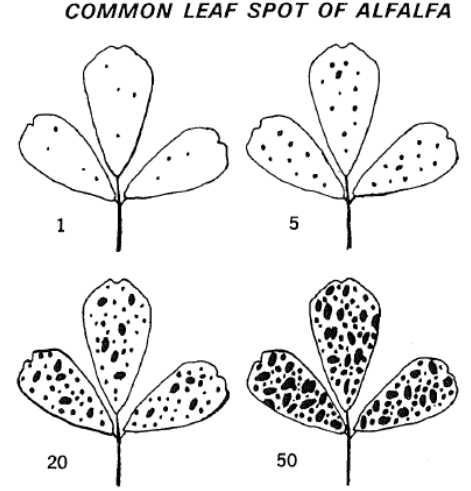
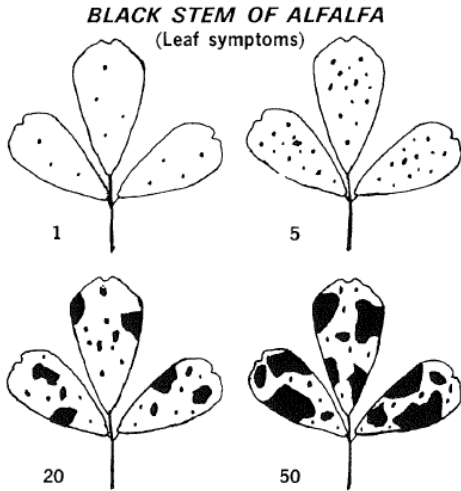
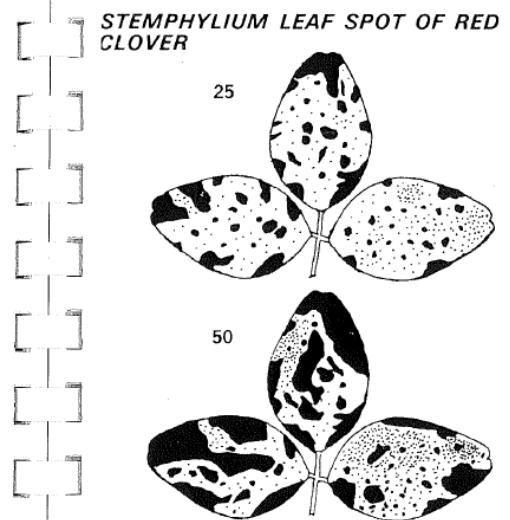
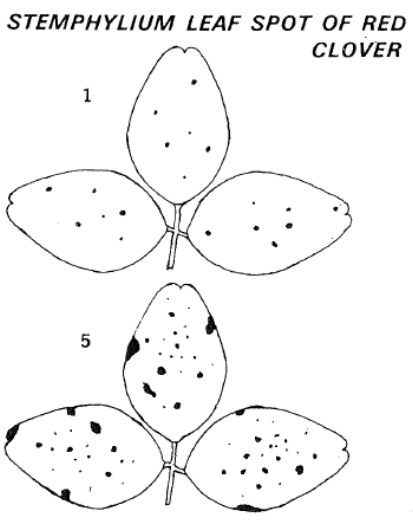
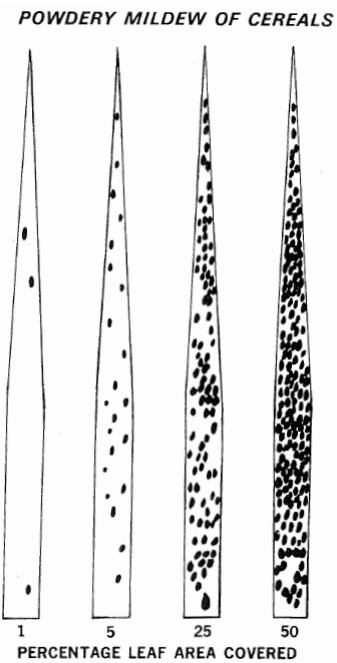
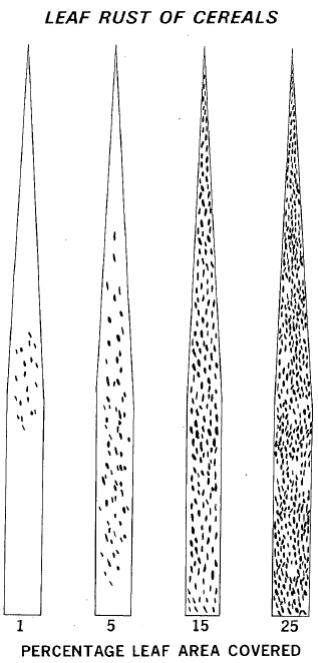


# Examples of 5% and 25% damage:

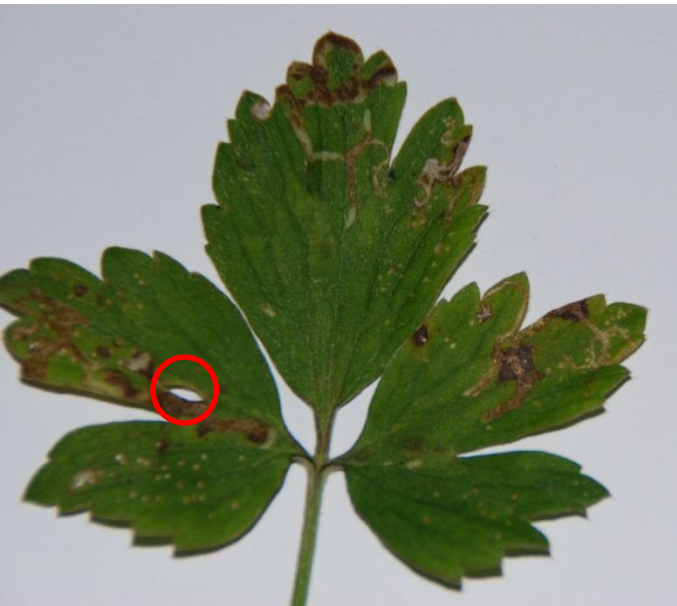
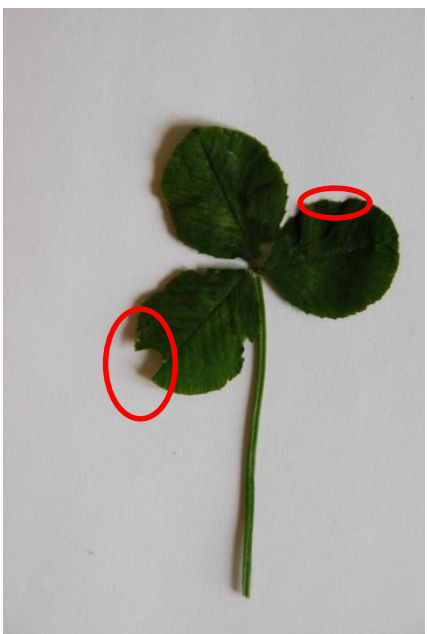
Note that the alfalfa drawings include a 20% rather than a 25% category.

Reference: James 1971. A Manual of Assessment Keys for Plant Diseases. Canada Department of Agriculture publication No. 1458.



**Chewing damage:**

defined by tissue removal all the way through the leaf, including tissue removal at the leaf margin



# Sucking damage (and others):

includes everything that feeds on the leaves, without making holes.



# Pathogen damage:

Mainly rust, mildew and other (e.g. leaf spots)/unknown fungal damage. Some pathogens are present only on the underside of leaves (e.g. spore packages), so remember to check both sides of the leaf.



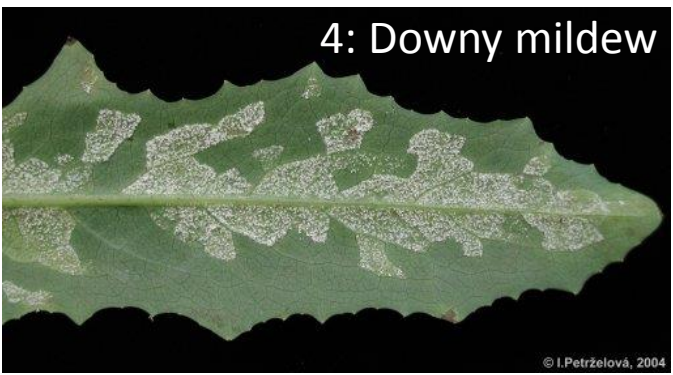
1: Rust Knautia



2: Rust grass, with additional leaf spots



3: Rust



4: Downy mildew



5: Powdery mildew



6: powdery mildew



7: Other fungus



8: Other fungus

## References for pathogen pictures from other sources

### 3. *Puccinia jaceae* (Puccinales) - Rostpilz

Eric Coombs, Oregon Department of Agriculture, Bugwood.org - See more at:

<http://www.ipmimages.org/browse/detail.cfm?imgnum=5436303#sthash.xnauAt3V.dpuf>

### 4. *Bremia lactucae* (Peronosporales) – Falscher Mehltau

[http://www.google.de/imgres?imgurl=http%3A%2F%2Fbotany.upol.cz%2Fatlasy%2Fsystem%2Fimages%2Foomygota%2F2b--bremia-lactucae--sporulace.jpg&imgrefurl=http%3A%2F%2Fbotany.upol.cz%2Fatlasy%2Fsystem%2Fgallery.php%3Fentry%3DBremia%2520lactucae&h=280&w=512&tbnid=BSi5rwGSSZn1jM%3A&zoom=1&docid=TjlvfX\\_DO\\_ZkcM&ei=9c3dVPDwBIR6ygP8p4KIDw&tbnid=isch&iact=rc&uact=3&dur=1519&page=1&start=0&ndsp=44&ved=0CIIBEK0DMB8](http://www.google.de/imgres?imgurl=http%3A%2F%2Fbotany.upol.cz%2Fatlasy%2Fsystem%2Fimages%2Foomygota%2F2b--bremia-lactucae--sporulace.jpg&imgrefurl=http%3A%2F%2Fbotany.upol.cz%2Fatlasy%2Fsystem%2Fgallery.php%3Fentry%3DBremia%2520lactucae&h=280&w=512&tbnid=BSi5rwGSSZn1jM%3A&zoom=1&docid=TjlvfX_DO_ZkcM&ei=9c3dVPDwBIR6ygP8p4KIDw&tbnid=isch&iact=rc&uact=3&dur=1519&page=1&start=0&ndsp=44&ved=0CIIBEK0DMB8)

### 5. *Erysiphe trifolii* (Erysiphales) – Echter Mehltau

<http://www.google.de/imgres?imgurl=http%3A%2F%2F4.bp.blogspot.com%2F-Q9R93vWsRic%2FUew7uhMu85I%2FAAAAAAAAAAD9E%2FfYDbqAek7Zk%2Fs1600%2FCromwell%252BBottom%252B17-07-13%252BErysiphe%252Btrifolii%252Bvar.%252Btrifolii.JPG&imgrefurl=http%3A%2F%2Fcalderdale-fungi.blogspot.com%2F2013%2F07%2Fyorkshire-naturalists-union-visit-to.html&h=1200&w=1600&tbnid=gxIUFHwojRANNM%3A&zoom=1&docid=p6i-BYo-VeLHcM&ei=bNDdVIGHGvcywPmsolYQCQ&tbnid=isch&iact=rc&uact=3&dur=321&page=2&start=46&ndsp=63&ved=0CLYCEK0DMFk>

### 6. *Erysiphe ranunculi* 1 und 2 (Erysiphales) – Echter Mehltau

[http://www.google.de/imgres?imgurl=http%3A%2F%2Fjule.pflanzenbestimmung.de%2Fwp-content%2Fuploads%2F2013%2F01%2FErysiphe%20aquilegiae%20var%20ranunculi%20Ranunculus%20acris%20JKruse-5.jpg&imgrefurl=http%3A%2F%2Fjule.pflanzenbestimmung.de%2FErysiphe-aquilegiae-var-ranunculi-2%2F&h=600&w=800&tbnid=yJkxS\\_m8CU0IIM%3A&zoom=1&docid=wkr0xW2JuB\\_iGM&ei=ItXdVP-EIovIatSRgdAE&tbnid=isch&iact=rc&uact=3&dur=1310&page=1&start=0&ndsp=56&ved=0CCwQrQMwBA](http://www.google.de/imgres?imgurl=http%3A%2F%2Fjule.pflanzenbestimmung.de%2Fwp-content%2Fuploads%2F2013%2F01%2FErysiphe%20aquilegiae%20var%20ranunculi%20Ranunculus%20acris%20JKruse-5.jpg&imgrefurl=http%3A%2F%2Fjule.pflanzenbestimmung.de%2FErysiphe-aquilegiae-var-ranunculi-2%2F&h=600&w=800&tbnid=yJkxS_m8CU0IIM%3A&zoom=1&docid=wkr0xW2JuB_iGM&ei=ItXdVP-EIovIatSRgdAE&tbnid=isch&iact=rc&uact=3&dur=1310&page=1&start=0&ndsp=56&ved=0CCwQrQMwBA)

### 7. *Ramularia ajugae* (Ascomyceta)

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### 8. *Drechslera phlei* (Ascomyceta)

<http://www.pflanzenkrankheiten.ch/index.php/de/krankheiten-an-kulturpflanzen/futtergraeser-und-rasen/lieschgras-timothe/85-drechslera-phlei>