

# Identifying

# late blight reaction types in potato varieties.

## Hypersensitivity response in a resistant variety

### Characteristics:

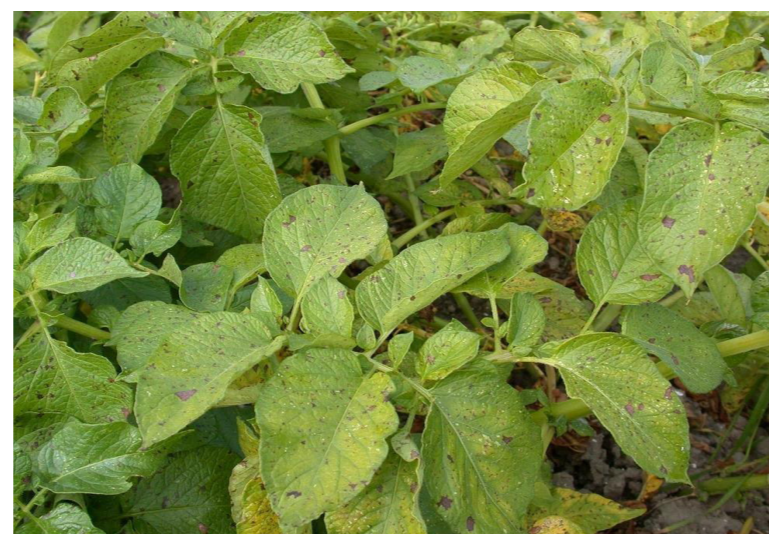
- Hypersensitivity in the form of brown lesions (blotches).
- No difference between adaxial and abaxial side of the leaf.
- No greyish-white mould (sporulation) visible.

### Leads to:

- The cells affected by late blight are actively destroyed by the plant, which leads to fatal starvation of the pathogen.

### Note:

- However, this hypersensitivity reaction looks very similar to the reaction that is seen when *Alternaria solani* is causing early blight. Early blight can be distinguished from late blight by the presence of small brown lesions in concentric rings that look similar to tree growth rings.



## Late blight without sporulation

### Characteristics:

- A brown blotch on the abaxial side of the leaf.
- Leaf is dry and there is no greyish-white mould present.

### Leads to:

- The leaf is showing a reaction but the resistance gene is still functional.

### Note:

- However you still need to keep a close eye on the crop. If the pressure from late blight starts to build again and the conditions favour the disease, any *Phytophthora* present will attack the crop fast.



## Late blight infection with sporulation in a resistant variety

### Characteristics:

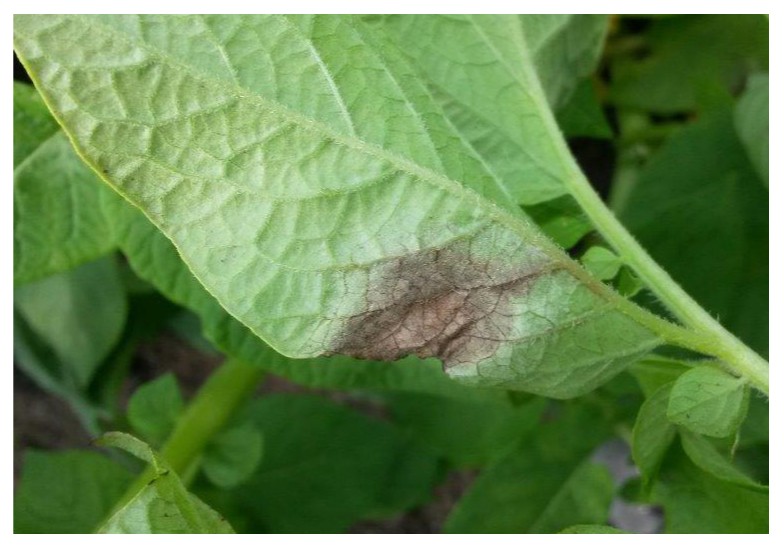
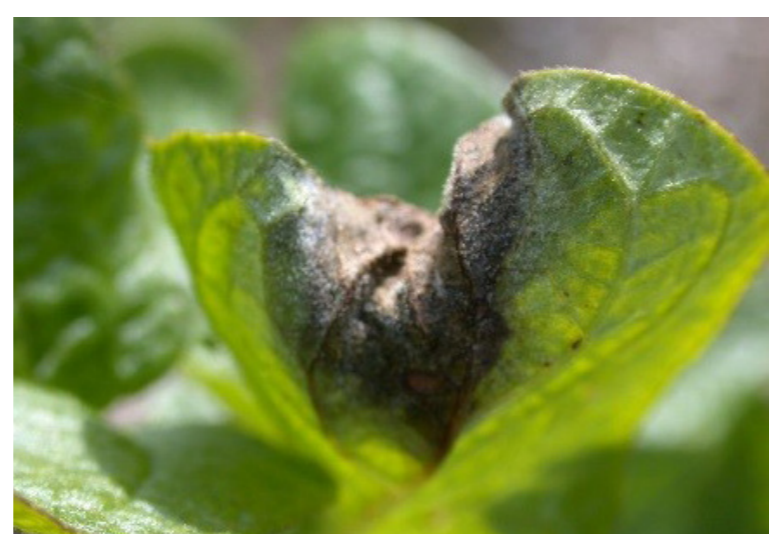
- Dark lesions on the leaves with clear greyish-white mould on the abaxial side in the zone between green and dead tissue.

### Leads to:

- For resistant varieties, this means that the resistance to that particular strain of *Phytophthora* will not hold up.

### Note:

- It is by no means certain that the same resistance breaking strain of *Phytophthora* will be active again in future years in the same area. This means that resistance in varieties can be re-used year after year in a similar fashion.



## Mildly sporulating reaction in a mature crop

### Characteristics:

- A maturing, less vital crop with lesions showing mild sporulation.
- Late blight is mainly evident in the lower leaves (these are often the leaves that turn yellow).

### Leads to:

- The crop is barely investing in its resistance response by this stage, the symptoms are more severe.
- The plant's resistance has not been breached as the tuber's resistance is still functional.

### Note:

- Because the crop is already maturing, it won't be long until it defoliates naturally. Most late blight resistant varieties also have good tuber resistance, with a few exceptions.



## Tip!

To find out whether you are dealing with *Phytophthora infestans* or *Alternaria solani*, all you need is a simple plastic container with a lid. Place a few affected leaves underside up on a piece of dampened kitchen paper in the container. Close the lid and leave the container at room temperature overnight. If there is greyish-white mould visible around the edges of the lesion, it is a *Phytophthora infestans* infection.

