

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.

