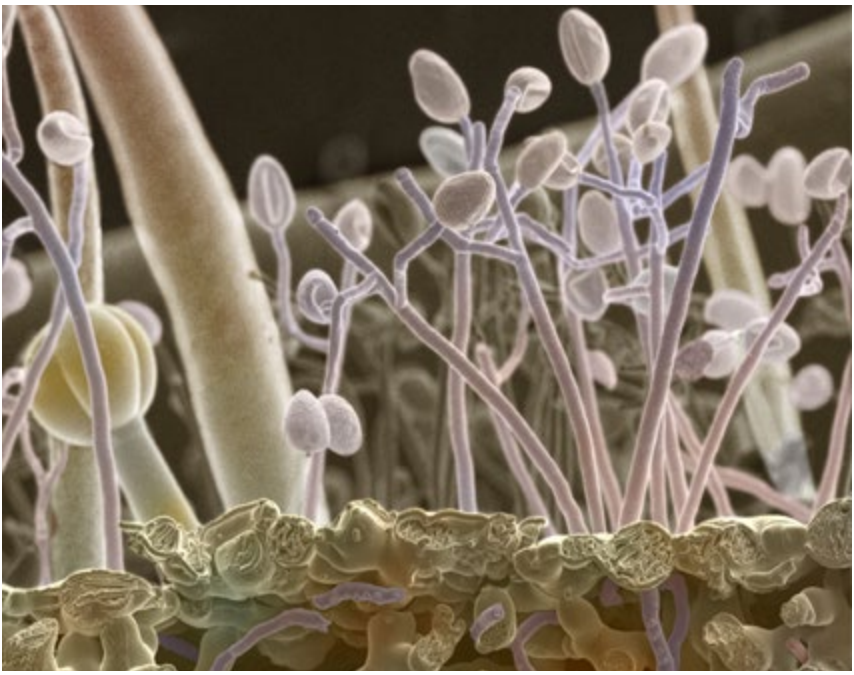

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Phytophthora cuts plant open

***Phytophthora infestans*, which causes potato blight, uses sharp protrusions to cut a path through the protective layer of leaves in crops. This discovery by Wageningen offers potential new ways of combating the disease.**

Plants have a protective layer that is designed to keep invaders like *Phytophthora* at bay. Yet this pathogen is still able to break through that layer and infect plants. Scientists did not know how the fungus-like organism did this, despite decades of research. 'We have now discovered that *Phytophthora* uses smart tricks to sharpen the tube it uses to infect the plant, letting it cut through the plant's surface like a knife,' explains Joris Sprakel, professor of Physical Chemistry and Soft Matter at Wageningen. 'As a result, *Phytophthora* can infect its host without using brute force or expending much energy. This is the first time this mechanism has been revealed.'

The discovery was thanks to a collaboration between phytopathologists, cell biologists and physicists at Wageningen. Professor of Phytopathology Francine Govers sees possibilities for new ways of combating *Phytophthora*. 'The laws of mechanics tell us that *Phytophthora* can't penetrate the plant until it has attached itself firmly to the leaf surface.' This may offer options for warding off the pathogen without using chemicals or plant breeding.

The researchers have tested the theory by spraying the leaves of potato plants with a substance that obstructs the attachment process. This reduced infection levels by between 65 and almost 100 per cent. *Phytophthora* is a threat to potato yields throughout the world. The damage can be as much as six to seven billion euros a year. The pathogen also causes considerable damage to tomatoes, aubergines, cocoa, peppers, soya beans and palms. The researchers published their results in July in *Nature Microbiology*.

Info: joris.sprakel@wur.nl