

Diagnostics of plant diseases

Healthy crops for a safe and sustainable agriculture

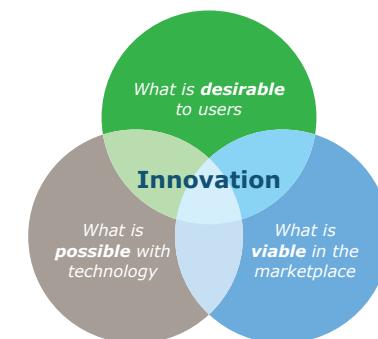


Healthy plants to feed the world

- Healthy crops are essential for safe, healthy, and sustainable farming. They contribute to the quality of food and life
- Reliable diagnostics for the timely detection of plant pests and diseases provide the basis for healthy crop production
- This is how diagnostics helps controlling risks and provides security during crop production

Diagnostics of plant diseases at Wageningen UR

- Our scientists are experts in the field of phytopathology and the application of new technologies. This combination of expertise gives us a head start in the search for solutions to practical problems
- The collaboration between primary diagnostics and diagnostics development in Wageningen UR provides a direct link with the wishes and ideas of our customers
- Any conceivable field situation can be mimicked and tested in our laboratories and greenhouse facilities
- Developed detection methods are rapidly made available to our clients through the services and sale of end products by *Prime Diagnostics*
- The detection methods we develop are meeting the needs of our clients. They range from simple field tests through to very advanced detection systems for *high-throughput* laboratories



The reliable tests and diagnostics of Wageningen UR provide our clients with security and restrict risks in critical processes in plant health.

Please visit our website for more information about our various projects and publications:
www.wageningenur.nl/healthyplantstofeedtheworld
Under "Diagnostics Plant Diseases" you also find our services in the field of Primary Diagnostics and Electron Microscopy.
On www.primediagnostics.com you find the catalogue of Prime Diagnostics. This catalogue contains the end products, and the methods we develop, produce and market worldwide.



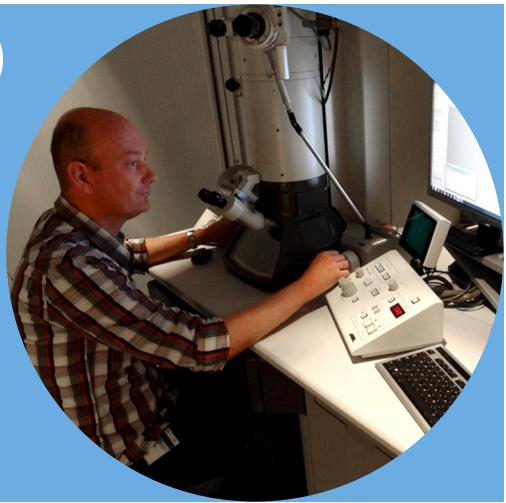
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Electron microscopy (EM)

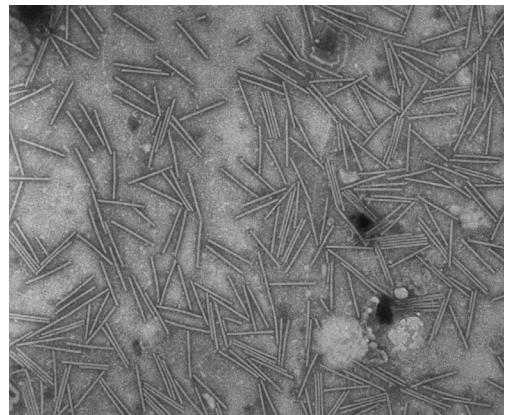
Making the invisible visible



In an electron microscope a beam of electrons makes the surface or content of a minuscule object visible. The use of electrons instead of photons, as used in light microscopy, results in a higher resolution and magnification. Electron microscopy is, for example, used to study micro-organisms, such as viruses, for morphological characteristics.

Advantages

- Our scientists are experts in the field of phytopathology and the application of new technologies. This combination of expertise gives us a head start in the search for solutions to practical problems
- The resolution of electron microscopy is at least 2000x higher than that of light microscopy; this allows visualisation of extremely small objects
- Electron microscopy can be applied on biological and inorganic objects, and in plant pathology it is specifically used to analyse the structure of virus particles
- The electron microscope continues to play a significant role in the medical as well as the animal and plant sciences in the discovery, characterisation, and description of unidentified viruses
- Plants can rapidly be analysed for the presence of viruses, even before other test methods can give a definite answer
- The shape of the virus particle can give an indication of the group to which the observed virus belongs



Approach and procedure

Wageningen UR has at its disposal various electron microscopes (transmission and scanning electron microscopes) and facilities for sample preparation. This enables us to provide a range of possibilities regarding sample material and scanning technologies. Our facilities are used for biological, physiological, and materials research.

In plant virological research we offer you the possibility to submit suspect plant material for analysis. Together with you we decide which electron microscopic technique is best meeting your requirements before carrying out the analysis.



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