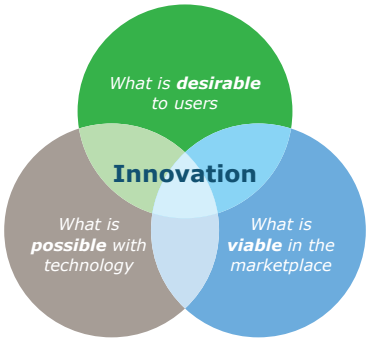
Healthy plants to feed the world

- 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 fromsimple 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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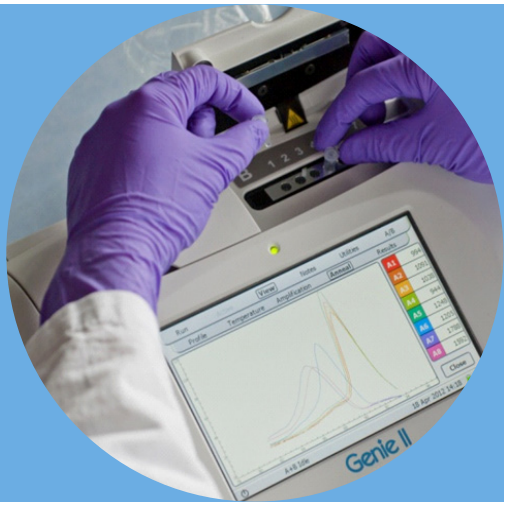
LAMP

Real-time on-site detection



***LAMP* is a rapid and robust method for the detection of pests and diseases and can simply be carried out in greenhouse, field, or laboratory. Pathogens or pests are detected on the basis of DNA or RNA.**

- **Preparation**: take a sample of leaf, seed, insect, soil, air, or substrate and homogenise this in a buffer
- **Reaction mixture**: mix this sample extract or control material with the *LAMP*-reagents-mix
- **Execution**: the *LAMP* reaction is performed in a portable instrument (Genie II or III) and any present pathogens are detected
- **Result**: the *LAMP* reaction is presented on screen as a real-time graph. The presence of a pathogen will show up in the form of a rising fluorescence curve

Advantages

- **Simple:** handwork reduced to five minutes because no time-consuming sample preparation or isolation of DNA or RNA is required
- **User-Friendly**: operation by means of a touch screen without the need to adjust the settings during the procedure
- **Portable:** the Genie II instrument is designed for on-site use, operates on batteries and is portable (2 kg). GPS and WiFi are additional features of the Genie III
- **Rapid:** result within half an hour!
- **Simple interpretation:** results are presented graphically
- **Robust:** slight fluctuations in conditions during the on-site test and/or in plant components do not, or hardly, affect the final result

Approach and procedure

The reagents required for conducting the *LAMP assay* can be obtained from *Prime Diagnostics* (www.primediagnostics.com).
In case you are interested in *LAMP*, please contact us.

In case you would decide on a *LAMP assay* you can, during implementation and/or execution, count on extensive support by our Diagnostics team.

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