

Digital diagnostics of potato diseases

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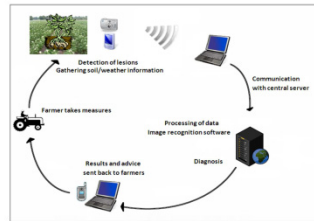
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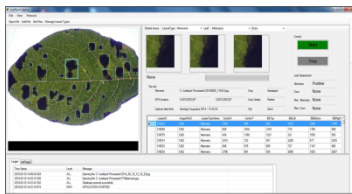
The need for proper diagnostics

Diagnostics by visual inspection is difficult, leading to many ineffective treatments in the field. Can you name the diseases on the leaflets below? Laboratories may not be available or fast enough to provide the answer. Digital diagnostics using smartphones and analysis software may provide the solution.



Development & validation of digital diagnostics

- App, hardware and analysis software were developed
- Samples were photographed using hardware & app
- Samples were analyzed in our laboratory to validate
- Based on over 15.000 lesions; algorithms were designed for the analysis software



Key observations

- 71% of lesions not caused by microbes (pollution, spray damage etc.), yet many are treated as such.
- Lesion size, colour, shape, number and symmetry are decisive in diagnostics
- Cultivar and soiltype also influence outcome
- 98% similarity between digital and classical diagnostics

The use for digital diagnostics

In the coming season we will test the system with various users and expect to go live in 2018. Expansion to other crops and regions is anticipated.

Diagnostics in a laboratory is good, but when speed is important or when no lab is available, digital diagnostics provides a good alternative. Preventing the use of unnecessary pesticides and only acting when needed allows for better integrated crop management.

