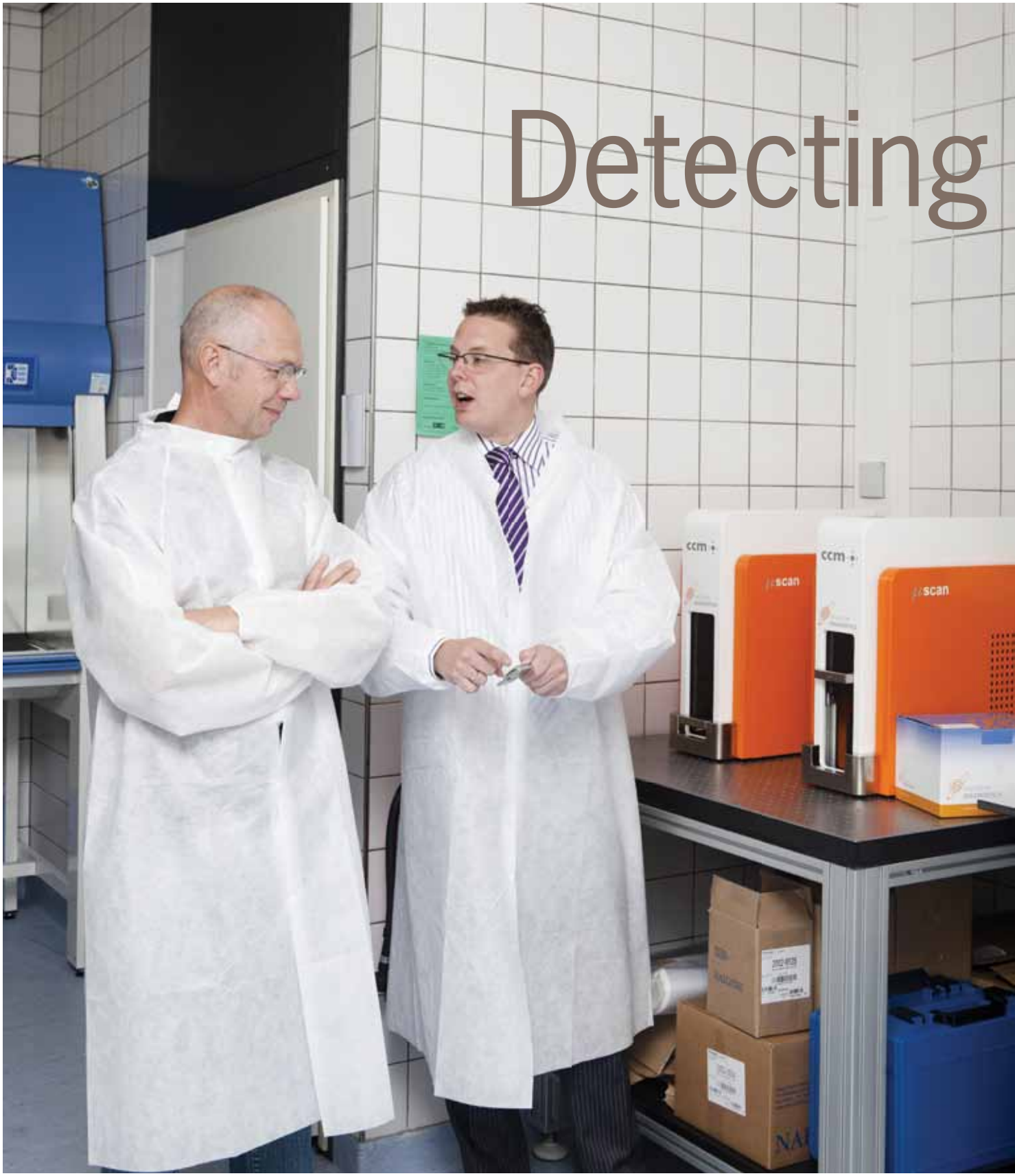
Detecting



Jan bergervoet of Plant Research International (left) and Michel Klerks of Innosieve.

bacteria faster

Detecting bacteria in water or food can take an awful long time. Michel Klerks of Innosieve Diagnostics and Jan Bergervoet of Plant Research International think they have found a solution: a test that can sometimes give results in an hour.

TEXT KORNÉ VERSLUIS **PHOTOGRAPHY** PETER DE KROM

Anyone wanting to find out whether there is legionella in drinking water could be busy for days. Michel Klerks: 'We can do it within an hour. And that can make all the difference – take a care home for example. You don't want to have to wait ten days after an outbreak of legionella before the plumbing is declared safe.'
Klerks developed the quick test together with Jan Bergervoet of Plant Research International (PRI), part of Wageningen UR, who is an ex-colleague of his. Before Klerks set up his company Innosieve Diagnostics in 2009, he worked for ten years at PRI on the development of new methods of detecting bacteria, and he received his PhD for research on salmonella on lettuce. According to Bergervoet, Klerks was already more business-minded than his colleagues in those days. 'It was certainly clear that he wanted to go in this direction.'

FINDING A SINGLE BACTERIUM

Klerks saw his chance to build up a company thanks to a new, quick test for detecting bacteria. The main reason this can take so long is the slow growth of the pathogen. For a test to be reliable, the bacteria from a water sample should be cultured for days in a lab. Only when enough bacteria have been bred is it possible to say whether the sample was infected or not. According to the rules in operation, this procedure takes ten days for legionella.
The Sieve-ID test developed by Innosieve does the test without that long incubation period. A water sample is pushed through a special filter and the bacteria which stay behind on the filter are coloured with antibodies which only attach themselves to, in this case, legionella. A type of automatic microscope, the muScan, then analyses the surface of the sieve.
This year Klerks and Bergervoet completed a European research project in which they worked with French and German researchers to find ways of using the quick test on bacteria in food as well. A good test should find just one bacterium in 25 grams of meat or cheese. 'The trick is to get the sample clean enough so that the filter doesn't get blocked up straightaway, whereas on the other hand you don't want to lose the bacteria you are looking for.' One and a half years of research delivered protocols for fast detection of bacteria such as salmonella, listeria and campylobacter, making use of the micro-sieve and the muScan analysis.

CHASING DEFAULTERS

Bergervoet: 'Thanks to close cooperation with Innosieve, we can work fast and effectively. An additional advantage is that the cooperation also offers extra scope for sourcing funding. For example, there are subsidy programmes which a small- or medium-scale entrepreneur should be involved in.'
Bergervoet is linked to Prime-diagnostics, a department of PRI that develops tests for detecting pathogens in plants. He has never had any ambition to start up a business of his own. 'In the end what I like doing best is research on new tests. I am happy to leave all the other stuff to someone else. I have no wish to go chasing after defaulters.'
Klerks: 'It is true that those sorts of things take up a lot of time and energy. But I enjoy doing it, and it is nice to build up something yourself and see it grow.'

STEALING THUNDER

Innosieve rents office and laboratory space from PRI. Klerks: 'It is the ideal place for me. The facilities are here and I know the people. Partly because of that I was able to get off to a flying start. And yet some things did change once he was working for himself. 'I can still knock at everyone's door, but now I am an ex-colleague. The relationships have become more businesslike.'
'You are a bit more careful what you talk about when he is around', says Bergervoet. But they are not afraid that anyone will try to steal someone else's thunder. Klerks: 'The collaboration serves above all to reinforce each other and to get access to new markets.'
To this end, PRI also has a muScan at its disposal for research and diagnosis. Clear agreements have been made about potential marketing. 'If Jan finds a client tomorrow for whom he can develop a test, that's fine. I stand to gain if my technology is used by other people.' ■

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