

# MEDIA RELEASE

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ATTENTION: Chiefs of Staff, News Directors

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## **New research promises more rapid detection of unwanted microbes in food**

The genomics revolution is helping food scientists to better predict microbial presence and possible toxin production as well as respond more rapidly should a food calamity occur, according to Professor Stanley Brul, University of Amsterdam.

Professor Brul is in Australia to present strategic research that will improve response times in situations of food contamination by providing rapid analysis and detection of unwanted microbes and derived toxins that can cause serious chronic illness and even death.

A world leader in systems biology, he became Distinguished Research Scholar, University of Tasmania earlier this year and will present a public lecture at the University this evening.

"The genomics revolution enabled a detailed characterisation at sub-species level. With some prominent model organisms it provided also detailed insight in stress response survival mechanisms," Professor Brul said.

"Both areas taken together offer the possibility to create predictive models of microbiological food stability and safety given a preservation/preservative treatment," Professor Brul said.

Using genomics food scientists can now look inside the cell and verify what kind of genes there are. Sequencing of a genome of 3-4MB, which in the past would take many years, can now be done in one to three days.

"The quantum leap forward came with the automation of the sequencing reaction that preceded this development. Thus, it is also possible to see whether a strain which had never previously shown toxin production is in principle capable of producing toxin.

Rapid detection techniques can be developed based on the gained insight. To the consumer this will mean shorter response time in the case of a calamity."

It is estimated in Australia that there are 5.4 million cases per year or 14,800 cases per day of foodborne illness with about 120 deaths annually. The cost of these levels of foodborne disease is estimated to be \$1.2 billion per year.

Professor Brul has a research alliance with Australia through the University of Tasmania and the Food Safety Centre of Excellence.

"The genomics studies that the Food Safety Centre of Excellence is performing on listeria as well as the modeling approaches that they have developed, and the recognition that we both have of the need to develop systems biology cell analysis approaches are connecting elements."

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