

## PUBLIC LECTURE

### Future food production- automation, robotics, vertical farming- is there a role for metabolomics?

**Prof Robert D. Hall**  
Wageningen Plant Research Institute  
Co-founder, Netherlands Metabolomics Centre

Food production is in transition. The global population is growing dramatically and consumption is shifting towards more calorie-rich diets. New strategies for improving overall food production levels ('more from less') through dedicated breeding strategies, agronomical automation, remote sensing etc are being developed to increase usable yield. Furthermore, in parallel, new strategies are being employed to understand better and enhance food quality to meet increasing consumer demands. In this talk, I shall describe some of the broad activities within WUR relating to enhancing future food production and indicate the potential for metabolomics approaches to help in this. With examples from diverse crops such as rice, cocoa, mushroom, asparagus, coffee etc I will emphasize the wide applicability of metabolomics approaches in both a scientific and applied context. We are applying metabolomics to e.g. link taste and aroma to sensory properties of foodstuffs; to evaluate the potential of waste materials as a source of valuable chemicals; to remotely-sense disease appearance during production; to help select progeny in segregating populations combining agronomics and quality aspects in single genotypes; to describe disease / resistance mechanisms in plants. While the technology is still under development, especially regarding plant metabolite identification strategies, metabolomics approaches have already proven their value in advancing developments linked to food production transitions.

## About the Speaker



Professor Dr. Robert D Hall gained a PhD in plant biotechnology and enzymology (Edinburgh, 1984) and has subsequently completed ca 35 years research experience, including 25 years in project / group management. He moved to The Netherlands in 1987 where he currently works at Wageningen Plant Research as Deputy Business Unit Manager Bioscience. He also holds a Special Professorship in Plant Metabolomics at Wageningen University. He is co-founder of the Netherlands Metabolomics Centre ([www.metabolomicscentre.nl](http://www.metabolomicscentre.nl)) and is currently Chair of the Supervisory Board. He is on the Editorial Boards of Frontiers in Metabolomics, and the journal Metabolomics. He has completed over 200 publications of which ca. 75% are in peer-reviewed journals and he has edited 3 books including 2 on Plant metabolomics.

**21 November 2019**

The Ngee Ann Kongsi Auditorium,  
University Town,  
National University of Singapore

**10:00 am - 10:45 am**



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