Food safety & quality for connected supply chains

Presented by
Dr Kim-Yen Phan-Thien
School of Life and Environmental Sciences
Opportunities in Quality Food Research

- Link research in agricultural sciences with consumer-end quality
- Traditional qualities: appearance, sensory, composition, utility
- **Current consumer trends** prioritise embodied values reflected in production methods & business operations

- Consumers seek info about **provenance & production values**
- **Connected supply chains**: comprehensive traceability, credible data, authenticity, consumer sovereignty

Example: Cocoa

- Part of AIC project on ‘sustainability and profitability of cocoa-based farming systems in Indonesia’

- **Quality differentiation** of cocoa & chocolate from different geographical origins: flavour profiling, sensory evaluation

- **Industry & consumer perspectives** of single-origin chocolate: interviews, focus groups, online survey
Example: Peanuts

- Peanut industry interested in **nutritional quality differentiation**: healthy fat (high oleic platform), antioxidants, minerals

- Development of **rapid testing methods** for screening food quality traits in peanut kernels for plant breeding & QC

- Near-infrared spectroscopy calibrations for **oil content** & fatty acid composition in single seeds
Example: Almonds

- Soil science & food science collaborating to explore environmental & quality variation in almond orchards
- Spectroscopy & composition of genotypes from different Australian growing regions
- Characterisation of spatial variation in quality traits within orchards and relationship with soil & environment


(a) Whole Farm
(b) Study Rows

Food Safety & Quality in the Curriculum

- Food and Agribusiness degree launched in 2014 and continues as a stream in revised Science curriculum
- Industry engagement through FAB Internship Program & research projects is invaluable: generates ideas & opportunities
- Research and teaching is complementary
- Training next generation of researchers for food industry