

Food safety & quality for connected supply chains

Presented by

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Opportunities in Quality Food Research

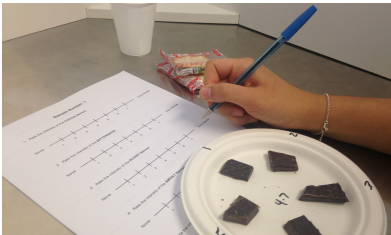
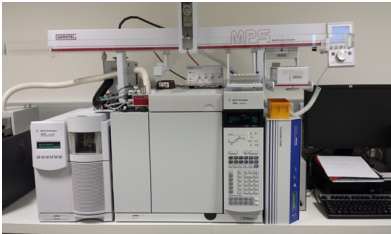
- Link research in agricultural sciences with consumer-end quality
- Traditional qualities: appearance, sensory, composition, utility
- **Current consumer trends** prioritise embodied values reflected in production methods & business operations



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

Example: Cocoa

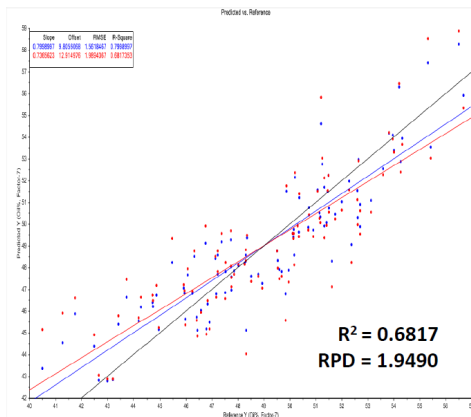
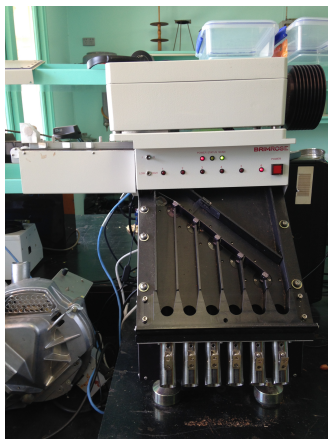
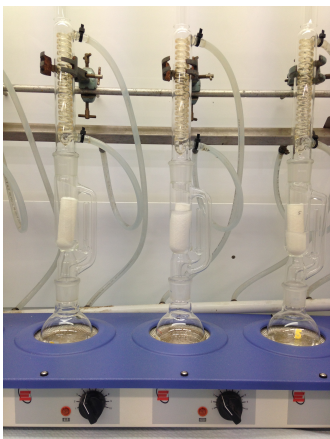
- Part of AIC project on ‘sustainability and profitability of cocoa-based farming systems in Indonesia’



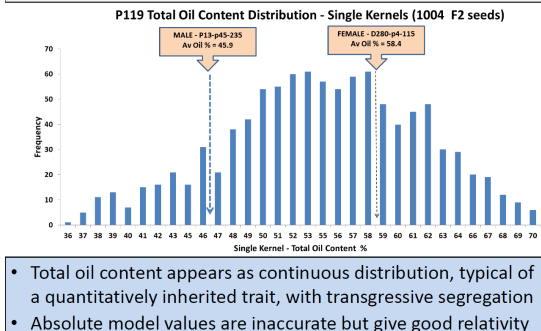
- **Quality differentiation** of cocoa & chocolate from different geographical origins: flavour profiling, sensory evaluation
- **Industry & consumer perspectives** of single-origin chocolate: interviews, focus groups, online survey

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



Results – Phenotyping F_2 Populations Using SeedM



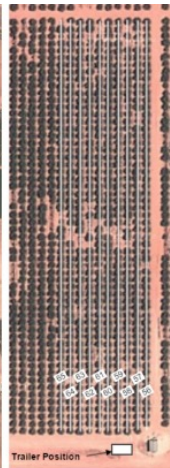
- Near-infrared spectroscopy calibrations for **oil content** & fatty acid composition in single seeds

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



Image: Underwood et al, 2016

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

