Quality Food @ Sydney
Institute of Agriculture

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Why Food Quality Research?

- Natural extension of agricultural production
- The **Farm** is where quality begins
- Quality depends on environment, genetics, handling within the supply chain
- Ultimately it’s the consumer that decides the quality that is **fit for purpose**

What does the consumer want?

- Nutritious
- Safe
- Sustainably produced
- Provenance
- Novel foods
- Flavoursome

Global sales of healthy food products are estimated to reach $1 trillion by 2017 according to Euromonitor
SIA Research in Food Quality

Feeding the world is big business: make it your business

Theme: Quality Food

- Consumers 1
- Fresh Food 2
- Food Waste 3
- Food Processing 4
- Indigenous Food 5
- Agri-business 6
- Food Safety 7

The University
8% Australians eat 5 serves of vegetables per day

In Australia campaigns have not worked

Internationally few examples of success

Campaigns require tailoring to target groups with poor eating habits

Education of health benefit labelling + nutrients 10% or more of RDI
Food Waste: Value added products

Peanut Waste

- Shell
- Meal
- Lignin
- Extraction
- Fermentation
- Product A

Horticultural Waste

- Protein
- Dietary Soluble and Insoluble Fibre
- Antioxidants
- Minerals
- Neutraceuticals

ARC Training Centre for the Australian Food Processing Industry in the 21st Century (IC140100026).

Researchers: Marjan Arab, Maryam Foktari, Peter Vatchev, Kim-Yen Phan-Thien, Dale McClure, Robyn McConchie and Fariba Dehghani
Processing: Starch

- Natural polymer of major significance for humans

- 50-70% of dietary energy
  - how we digest starch has health implications
    - glycemic effect
    - food for gut microbes

- Major industrial product
  - 60+ million t/yr extracted from crops for use as a functional ingredient in foods (60%) and in non-food applications (40%)

- Research on structure-function relationships processing and nutrition

Researcher: Les Copeland
Indigenous Food: Rice

• **Oryza meridionalis** and **Oryza australiensis** are wild species related to domesticated rice (**Oryza sativa**) and are endemic to northern Australia.

• How do native Australian rices grow in **highly saline soils**?
• What are the **grain quality** attributes of the native Australian rices?
• How will grain quality be affected by **rising atmospheric [CO\textsubscript{2}]**?

Researchers: **Tom Roberts** and **Brian Atwell**, Macquarie University

Wild rice growing on the floodplains of the Northern Territory
Photo: CDU

Wild rices growing in glasshouses at Macquarie University

Wild rice collected from the floodplains of the Northern Territory
Photo: Matt Brann
Food Safety: Fresh Produce Recalls in Australia

Victorian Health Department said 143 people fell ill with salmonella after eating Tripod pre-packaged lettuce products in 2015 and 2017.

8 people contracted hepatitis A from eating Patties Foods' Nanna's frozen berries. Highlighted concerns about country-of-origin labelling on food.
ARC ITTC Food Safety in Fresh Produce

Science-based understanding food-borne pathogens in production and postharvest environments and deliver ready-to-use solutions for industry

On-Farm Environment

Postharvest Environment

$~6M project
2017-2020
9 PhD Students
3 Postdocs
20 Industry Partners

Risk Assessment
Quality Food@SIA will harness the University’s breadth of skills in food research, providing a vision for innovation in food quality