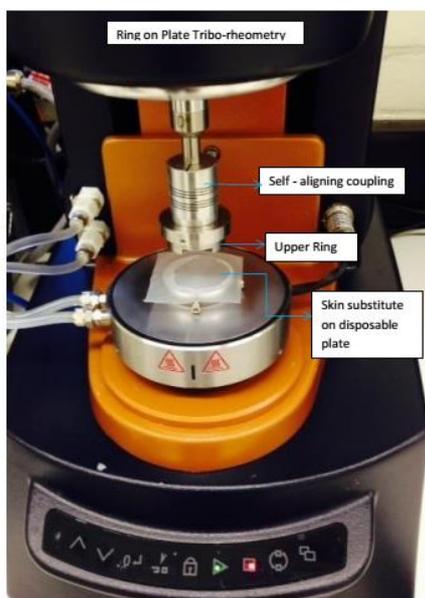


# ARC Dairy Innovation Hub – Research Themes

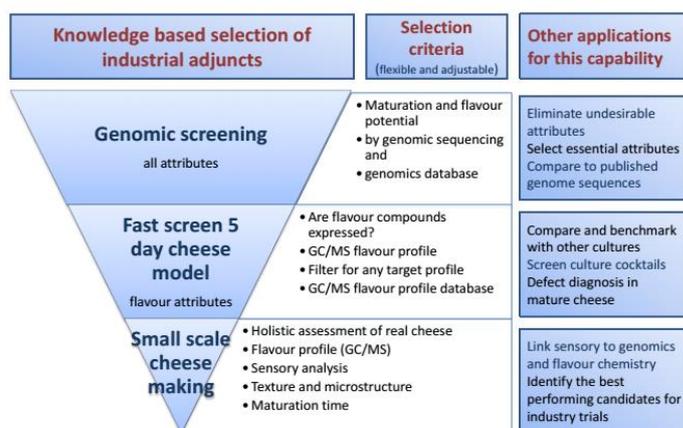
## Food Quality

The *Food Quality* theme, led by Dr Sangeeta Prakash and Dr Nidhi Bansal at the University of Queensland (UQ) will focus on cheese flavour research and oral perception of dairy foods using instrumental methods. The first project will establish procedures for the characterisation of flavour and ripening fermentation cultures in close collaboration with dairy industry partners and Dr Mark Turner’s team at UQ. Underpinning this effort is a collection of over 3,000 strains of cultures housed at industry partner organisation Dairy Innovation Australia, which will be screened for their potential to accelerate cheese ripening and deliver mature flavour profiles. PCR-based methods, next-generation-sequencing and phenotypic methods will be used for the characterisation of a range of fermentation strains. The results will be correlated with chemical analysis and sensory assessment of mature cheese to evaluate and compare the strains. The second project will use advanced rheological techniques such as Tribology, in conjunction with sensory analysis, to better understand the chemical and physical basis for the desirable mouth feel of dairy foods, which cannot be characterised completely by conventional rheology alone. Rapid and objective instrumental methods have the potential to partly replace expensive and more subjective sensory methods leading to greater efficiencies in quality control and new opportunities for product development.



Left: Tribometer Rig at the University of Queensland

*Tribology is not widely used for dairy foods yet but has great potential. It can simulate lubrication behaviour of foods in the mouth during chewing and can be applied for instrumental assessment and development of low fat and low salt dairy products.*



~10 ripening cultures for production testing at DIAL  
 ~ 10 adjunct cultures for industrial trials  
 ➤ Cost effective culture products from DIAL

*The Adjunct Cultures Project will be supported by two postdoctoral positions and develop an integrated method for evaluation of ripening and flavour cultures for cheese*

### Key Collaborations with other Hub projects

The Food Quality theme will collaborate extensively accessing fermentation capabilities and culture collections at Dairy Innovation Australia. There will be close interaction with the sensory team at University of Queensland and the chemical analysis capabilities also at the University of Queensland. Close collaborations will be maintained with the microstructure team at the University of Melbourne, and dairy processors will work closely with the team through case studies and provision of samples.

#### Contact

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