# SNAPSHOT

# CHARLES STURT UNIVERSITY

# PARTNERSHIP PROGRAM FOR RED

# MEAT CAPACITY DEVELOPMENT

**Project Report Reference: 2018-1033**                    **Date: 24 April 2020**

**Project Description**

Support a Higher Degree Research Student to further develop their capacity for industry-based applied R&D, business development and innovation, and the introduction of new technologies in the industry. The student is working on a project called "Verification of grass-fed beef claims using Spectroscopic technologies" that is funded by NSW DPI and MLA. This project focuses on using Raman Spectroscopy to identify and differentiate carcases from various production systems.

**Project Content**

Higher degree Student Scholarship
Verification of grass-fed beef claims using Spectroscopic technologies

**Project Outcome**

The student has been approved to transition into a PhD program to expand her research and explore various avenues of utilising Raman spectroscopy for the meat industry. As such there will be a continuation of research into an additional year, allowing for advancement of knowledge and development of industry connections. Overall this project has enabled a HDR student to advance her research and complete sampling for her experiments that demonstrates that Raman Spectroscopy is a promising technology that can be utilised in the future for the verification of grass and grain-fed beef products produced in Australia. A published paper titled "Preliminary investigation into the use of Raman Spectroscopy for the verification of Australian grass and grain-fed beef" was

published in Meat Science. The student also presented at two international conferences including the 10th International Conference on Advanced Vibrational Spectroscopy, Auckland New Zealand and the 65th International Congress of Meat Science and Technology, Berlin Germany.

**Benefit for Industry**

The current method of verifying the production system of beef is dependent on audits and reliant on producers following the requirements set by processors, which vary for individual grain and grass-fed brands. Maintaining the current system of transparency through the supply chain for grass fed beef represents a significant cost to the industry in the form of auditing and an even greater potential cost if there is a failure in the auditing process. If the grass-fed claim was unable to be substantiated during a challenge, Australia risks losing market access to some markets which would result in a large economic loss. Raman Spectroscopy provides a non-destructive rapid test for the verification of the production system for beef products. This technology has the potential to be utilised in processing facilities as a quality control method to verify the grass and grain-fed carcases. This project has also enabled a young researcher to advance in the meat science sector which will increase the Australian capacity for research and development within the meat sector.

benefits for the program to the student

**Benefits for the student**

The student has been approved to transition into a PhD program to expand their research and explore various avenues of utilising Raman spectroscopy for the meat industry. As such there will be a continuation of research into an additional year, allowing for advancement of knowledge and development of industry connections and deeper understanding. This project has also enabled a young researcher to advance in the meat science sector which will increase the Australian capacity for research and development within the meat sector. As a result of this program the student has published in an international journal and presented their work at two international conferences. This program has provided the student with an opportunity to develop her skills and abilities and facilitated a greater understanding on the use of Raman Spectroscopy for use in the Australian Meat Industry.

## USEFUL RESOURCES

https://www.sciencedirect.com/science/article/pii/S0309174019304395
https://www.dpi.nsw.gov.au/about-us/media-centre/releases/2018/premium-beef-a-forensic-certainty

ampc.com.au