

TE MAURIAIO™

HIGH-VALUE
NUTRITION

Ko Ngā Kai
Whai Painga

National
SCIENCE
Challenges

agresearch

āta mātai, mātai whaiti

M
MĀTAI RONGOĀ



Dr Karl Fraser is a Senior Scientist in Nutritional Metabolomics based in the Food, Nutrition and Health team.

He has been working with metabolomics at AgResearch since 2005 and has performed a wide variety of metabolomics experiments encompassing soil, seeds, plants, endophytes, meat, milk and human health and nutrition.

He has a strong background in analytical chemistry and has been instrumental in developing and improving metabolomics workflows.

Karl's current research focuses on untargeted discovery metabolomics/lipidomics and targeted biomarker analysis.

Karl is involved in two High-Value Nutrition National Science Challenges (Peak Nutrition for Metabolic Health and Gastrointestinal health).

Karl has published over 50 peer reviewed papers and has an H-index of 20.

MĀTANGA PŪTAIAO

Dr Jane Mullaney (*Ngati Porou/Ngati Raukawa*) AgResearch.

- Jane obtained her MSc in microbiology in 2009 from Massey University.
- In 2010 she was the recipient of a Massey Doctoral Scholarship and Riddet CORE scholarship studying the bioactives in broccoli and the interactions with the gut microbiome.
- She obtained her PhD in 2013 and took up a postdoctoral position at the University of Queensland Diamantina Institute (UQDI).
- In 2014 she was awarded a Juvenile Diabetes Research Foundation post-doctoral fellowship at UQDI where she worked on the role of the microbiome in Type 1 diabetes.
- Returning to New Zealand in 2017 she joined AgResearch to work on the HVN priority programmes for infant and digestive health and is currently an associate investigator for these programmes.



- Additionally, she led a Vision Mātauranga programme on developing NZ grown bananas through tissue culture, which she continues to develop.
- She is now a senior scientist at AgResearch and an Associate Investigator for the Riddet Institute CORE 2021-2028.
- Her key expertise is in the microbiome, but she is always interested in anything involving plants, people, animals, health through nutrition and is a keen finch breeder of Gouldians.

REPORT

In recent scientific investigations, thousands of compounds have been discovered through sound research efforts. These discoveries have led to the identification of new metabolites that were previously unknown. Moreover, innovative ingredients have been developed by blending various rakau.

These findings underscore the importance of ongoing research and exploration in the realm of rongoā rakau, as they have the potential to revolutionise various industries and improve our understanding of the natural world of Māori mātauranga.

The 'Puna' (natural spring water) results came back pure including other staggering test findings.

During test presentation Three random compounds were chosen from Harold and one from Tautuhi

Browsing through data we chose 3 from Harold and 1 from Tautuhi.

RESULTS PRESENTATION 25 August 2022

HAROLD

- **Theanine**
- increases serotonin, dopamine and glycine levels in various areas of the brain.
- promotes relaxation by reducing stress and anxiety levels.
- **Rosavin**
- positive efficacy on fatigue, depression, mountain sickness, and cardiovascular disease.
- possesses antidepressant and anxiolytic activities.
- reduce stress, combat fatigue, increase mental performance and improve physical and mental fitness and resilience.
- **HYDROXYCOUMARIN**
- treatment of prostate cancer, renal cell carcinoma and leukemia
- therapeutic applications in cancer
- prevent formation of blood clots

TAUTUHI

- **ANTI-INFLAMMATORY.**

PUNA (natural spring water)

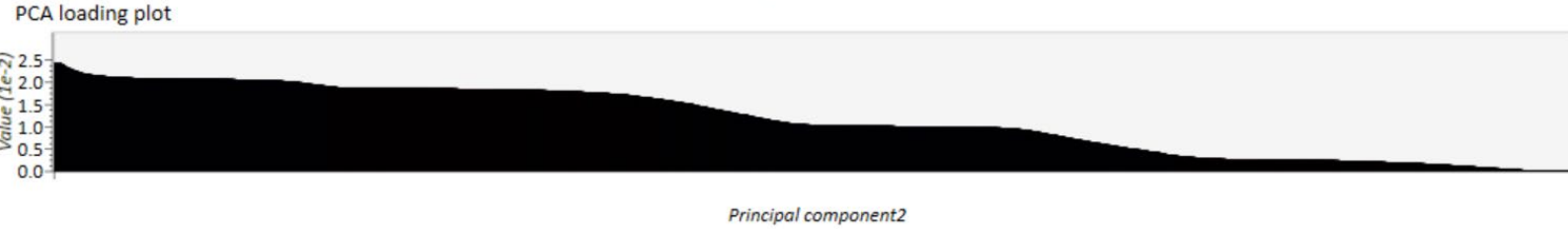
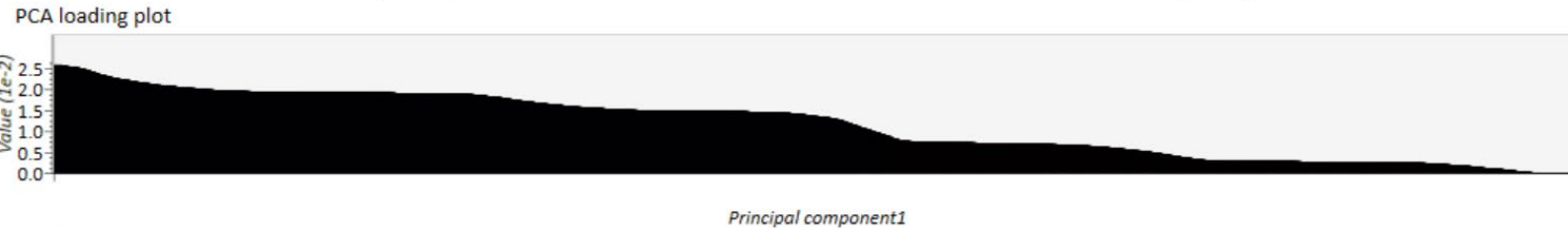
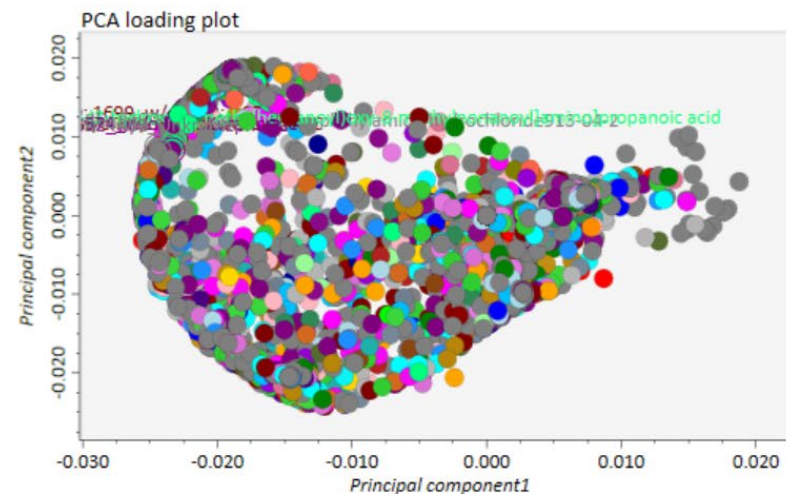
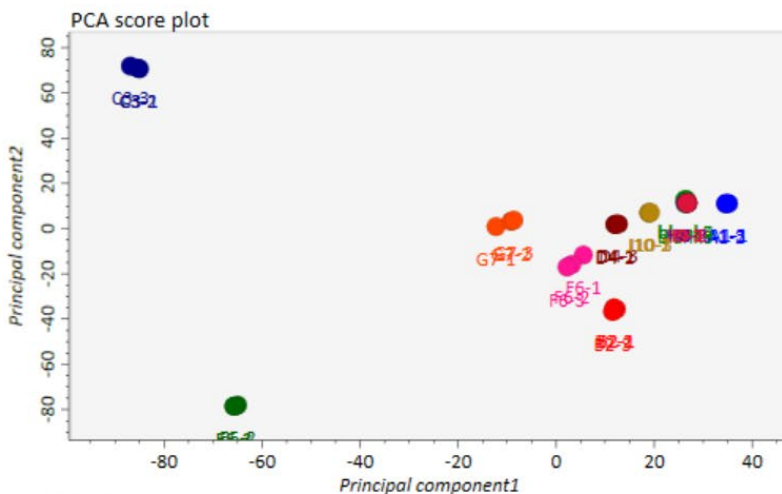
- Results came back **Pure**

REWAREWA HONEY

- Results in.

ivariate analysis result window

Component number: 1
Component number: 2
Type (sample): Label
Type (metabolite): None
Sample: 6
Metabolite: 6



Red: positive correlation Blue: negative correlation

The significant scientific data that has clarified a promising path forward in the field of natural remedies, specifically focusing on rongoā rakau.

The data received, has provided critical insights into the compounds responsible for the therapeutic properties of rongoā.



The data has highlighted key compounds within rongoā, which exhibit remarkable potential in addressing various health and well-being concerns. We have identified unique chemical constituents and bioactive molecules that demonstrate significant health and well-being properties, making them prime candidates for further research and development.

The outcomes of our research are particularly promising, suggesting that a strategic partnership investment would serve as a catalyst to expedite the remaining phases of rongoā development. This investment would facilitate the rapid testing, manufacturing, and distribution of rongoā products both domestically and on an international scale. The potential for such a partnership is rooted in the robust scientific data we have generated, which underscores the immense therapeutic value of these compounds and their applications in addressing global health challenges.

