Pacific Horticultural & Agricultural Market Access Plus Program
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KAVA RESEARCH POLICY BRIEF

Kava quality and industry growth: priorities for future research

The global kava market is projected to reach USD5.45 billion by 2032[1]. For Fiji and other kava-producing nations to access this opportunity, they will need to increase production and strengthen the reliability and quality of traditional and value-added kava products.

Achieving this will require substantial new investment in industry research, development and adoption. Better information is needed on how kava varieties, growing conditions and kava quality interact. A clearer understanding of these interdependencies – and how they influence product consistency – is critical to growing commercial kava opportunities and establishing agreed standards that protect the integrity of Pacific kava in export markets. There are also opportunities to better coordinate research efforts within Fiji and across the region to avoid duplication and realise greater economies of scale.

Under the PHAMA and PHAMA Plus programs, small but targeted investments have been made into discrete research activities. This paper summarises what has been done, what has been learnt, and what questions remain to guide further research priorities.

Understanding kava quality

Kava quality is shaped by three main factors:

Kavalactone levels

Kavalactones are the compounds responsible for kava's relaxant properties. Their concentration determines strength, with higher concentrations yielding stronger effects. Traditional kava powders typically range between 8-14%.

Taste

Taste is influenced by processing and preparation, as well as natural plant factors such as sugar content and bitter compounds in the roots.

Kavalactone profile

There are six major kavalactones, numbered as follows:

(1) *Desmethoxyyangonin*, (2) *Dihydrokavain*, (3) *Yangonin*, (4) *Kavain*, (5) *Dihydromethysticin*, and (6) *Methysticin*.

Their relative amounts are expressed as a six-digit kavalactone profile (for example, 426531), which lists the dominant kavalactones in descending order. This profile shapes the consumer experience. Generally, high levels of *kavain* (4) and low levels of *dihydromethysticin* (5) are associated with more positive effects.

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1 https://www.fortunebusinessinsights.com/kava-root-extract-market-103694

Summary of research supported by PHAMA/PHAMA Plus

Development of a Kava Quality Manual: Survey of Varieties of Kava Grown in Fiji (2014)

Purpose: To improve information available on kava varieties grown in Fiji.

Research was undertaken directly through PHAMA, with consultant support in collaboration with Ministry of Agriculture and Waterways (MoAW), University of the South Pacific (USP) and The Pacific Community (SPC).

Key outcomes:

- Collected field samples and images of kava varieties grown in Fiji.
- Analysed botanical traits and developed reliable descriptors for 13 key varieties.
- Created an identification key for inclusion in the Kava Quality Manual.

Research into factors that influence kavalactone levels in the kava plant (2025)

Purpose: To investigate kavalactone content and profiles of different kava varieties across Fiji to inform commercial decision making.

Research was led by Fiji National University (FNU), with PHAMA Plus support in collaboration with MoAW.

Key outcomes:

- Samples of all known kava varieties were collected from all kava-producing regions of Fiji[2], and analysed for their kavalactone strength and profiles. A national scale dataset now sits with FNU.
- Preliminary findings (not yet conclusive):

  > Kavalactone strength did not materially differ between varieties.
  > Most samples showed a general profile of 4[632][51], where square brackets indicate variation. This pattern reflects consistently high *kavain* (4) and low *dihydromethysticin* [DHK] (5) across kava from all sampled regions of Fiji — a combination known to produce favourable physiological effects for consumers.
  > No clear correlations were found between kavalactone profile and variety.
  > A variety identified in Vanua Levu may be an additional noble variety, though further verification is needed to confirm whether it is one of the existing 13 varieties, and just being described by farmers using a different local name (*Matanitabua*).
  > An unclassified variety was identified at all four sampling sites in Rabi, with origins unknown. Initial testing indicated that it could be non-noble, but further testing is required.

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2 *Bau, Kadavu, Koro, Naitasiri, Ovalau, Rabi, Rakiraki, Rotuma, Saqani, Savusavu, Tailevu and Taveuni.*

Recommendations for future research

Additional agronomic trials and chemical analysis, undertaken at sufficient scale, would greatly strengthen evidence-based industry development. This work should be prioritised and resourced at a pace that matches industry growth.

Public funding is recommended so that results can be made available for common use, supporting stronger commercial competition and more cohesive supply chain development. Research should also be designed to explicitly inform industry needs, with full data shared widely rather than held for academic purposes alone. Clear data sharing agreements should be established at the outset. There is also strong value in ensuring this work is carried out by Pacific Island researchers, building regional capability and supporting Pacific-led research, development and adoption.

Priority research questions include:

- Do some varieties provide better yields under specific environmental conditions?
- Are certain varieties more resilient to drought, water logging, salinity or disease?
- Can preliminary findings on the lack of correlation between kavalactone profile and variety be verified, and if so, what factors do influence kavalactone profile?
- What influences taste, and are there consistent relationships between taste, variety and growing conditions?

Breaking barriers in kava science: Fiji-led research advancing understanding of kava

At Fiji National University, researcher Deepti Devi has led work to analyse the kavalactone content and profiles of Fiji's kava varieties — an essential step towards improving product quality, strengthening farmer decision-making and supporting Fiji's growing export industry.

Deepti and a team from FNU and PHAMA Plus, with support from MoAW, travelled across all major kava-producing regions to collect samples from the 13 classified varieties. Fieldwork often required long treks through challenging terrain — from steep mountain climbs in Kadavu to difficult, rain-soaked tracks in Seqani — but these efforts were critical to building a national dataset now held at FNU.

Balancing the demands of fieldwork, laboratory testing and data analysis required careful planning and strong support systems, but the results have created a valuable foundation for Fiji's future kava research and industry development.

Deepti has now completed her PhD and is part of a growing cohort of Pacific researchers, committed to advancing regional interests through research that is grounded in Pacific expertise, context and networks.