Imported food risk statement

Kava (*Piper methysticum*)

Scope: Kava (*Piper methysticum*) root as defined in Standard 1.1.2, or kava beverage obtained by aqueous suspension of kava root, and permitted for sale in Standard 2.6.3 of the Australia New Zealand Food Standards Code.

Recommendation and rationale

Does kava present a potential medium or high risk to public health:

☑ *Yes*

☐ *No*

Rationale:

Kava (*Piper methysticum*) root or kava beverage obtained by aqueous suspension of kava root, as permitted for sale in Standard 2.6.3 of the Australia New Zealand Food Standards Code, consumed in-line with historical preparation and consumption practices, does not itself pose significant risk to public health.

However, consumption of kava food products that are not consistent with Standard 2.6.3 and the intent of FSANZ's P1057 Urgent Proposal work, are considered potential medium or high risks to public health and safety. These include:

- Kava beverage prepared using kava plant varieties without a history of safe use (i.e. not using Noble kava varieties), or using aerial parts of the kava plant.
- Shelf-stabilised ready-to-drink kava beverage products, herbal extracts of kava, kava used as an ingredient in foods or kava beverage that contains food additives or processing aids.

Additionally, kava plant and kava beverage are potentially susceptible to microbiological contamination and should be cultivated, stored and prepared accordingly. Kava beverage should be consumed soon after preparation.

General description

Nature of the product:

Kava beverage has significant cultural importance for communities throughout Micronesia, Melanesia and Polynesia, and has been consumed for more than 1000 years[1].

Historically, kava beverage in Pacific communities has been prepared by aqueous extraction using fresh or dried roots of the kava plant to produce a brew in a communal bowl. The beverage is then typically consumed immediately or shortly thereafter[2,3]. Drinkers of kava beverage report a sense of relaxation and tranquillity, and the drink is taken to promote a sociable attitude.

There are more than 200 varieties of kava plant[4]. 'Noble' kava varieties have been safely used by Pacific communities for kava beverage production (Appendix 1). These varieties are distinguished by their geographical distribution, physical characteristics and the properties of the kava beverage they produce[5]. Other kava varieties are not suitable for making kava beverage[5,6].

The pharmacologically active compounds in kava are kavalactones, which are extracted from the root of the kava plant during the preparation of kava beverage. The total kavalactone content of kava plants varies from 3% to 20% of dry weight, depending on variety, growth conditions and part of the plant[7]. Kavalactones have been reported to have psychopharmacological effects as well as muscle relaxant, local anaesthetic, anxiolytic and anticonvulsive properties[2]. These psychotropic effects appear to occur without reducing cognitive performance[2,8].

Flavokawains and piperidine alkaloids are documented minor compounds found in the kava plant[9–11]. It has been suggested these compounds present a toxicity risk when consuming kava beverage extracted from leaves, stems or bark of the kava plant, or from non-Noble kava plant varieties, but little toxicological data is available[12].

General description

The quantities of kavalactones, piperidine alkaloids and flavokawains removed from kava plant varies depending on: *1*) extraction methods (cold water kava beverage preparation, compared with other extraction methods)[13,14]; *2*) the kava plant variety (if the kava is of a Noble variety)[9]; or *3*) specific kava plant organs used for extraction (roots rhizomes or basal stems, compared with aerial portions)[10].

Substances in kava have been shown to inhibit important Cytochrome P450 liver enzymes *in vitro*, suggesting the potential for drug interactions[15,16]. Caution is recommended when consuming kava beverage in combination with alcohol, medicines (particularly benzodiazepines, opioids, barbiturates and paracetamol) or other herbal preparations[12]. The co-consumption of kava and alcohol intensifies the effects of alcohol on cognition, and alcohol and kava co-consumption has been identified as a risk factor in motor vehicle accidents on Fijian roads[17–19].

There is evidence that kava beverage is highly susceptible to microbial growth and is unsuitable for storage, even with refrigeration[20,21]. Kava beverage should be consumed soon after preparation[12].

The approved regional Codex standard for kava products states that kava root should be free from visible moulds, soil and foreign odour[22]. Mould-produced aflatoxin has been detected in kava root[23]. Contamination of kava plant product with aflatoxin-producing moulds is a suspected cause of hepatotoxicity events[24].

Herbal extracts of kava are used in complementary medicines listed on the Australian Register of Therapeutic Goods. Such kava-containing products are commonly marketed for the treatment of anxiety, insomnia, premenstrual syndrome and stress. The chemical composition of kava extracts differs from kava beverage and is outside the scope of this imported food risk statement.

Kava (both plant and beverage, including extracted kavalactones) is listed as a Schedule 4 substance in the current Poisons Standard. Kava products that are listed on the Australian Register of Therapeutic Goods are exempt from scheduling.

Adverse health effects:

Infrequent consumption of kava beverage in-line with historical preparation and consumption practices does not pose significant risk to public health[5]. Kava beverage does not demonstrate the same addictive properties as other potential substances of abuse and is seen to be far less harmful to individual users and the community[5].

However, excessive and recurrent consumption of kava is associated with adverse outcomes.

Consuming high quantities of kava beverage within a short timeframe can cause reversible[25]:

- sedation
- ataxia
- paralysis of the extremities
- extra pyramidal movements
- hearing loss
- impaired vision
- unconsciousness

Ongoing high-consumption of kava beverage (240–440 g/week or more of dried kava powder) is associated with adverse outcomes for both individuals and communities[25–27], such as:

- **Ichthyosiform skin rash** - the most commonly observed side effect of ongoing high-quantity kava beverage consumption is a form of ichthyosiform skin rash or kava dermopathy. Kava dermopathy is characterised by dry, flaky skin and yellow discolouration of skin and nails. These effects are reversible once consumption has been discontinued.

- **Altered liver function** – The health effects of kava beverage consumption in First Nations communities documented consistent changes in liver function tests in heavy kava drinkers. These changes appear reversible, returning to normal within 1-2 months after kava use is stopped.

- **General physical health effects** – Other effects on overall health of ongoing heavy consumers of kava have been reported with varied levels of evidence quality. These include decreased body weight, nausea, loss of appetite, conjunctivitis, loss of sexual drive and raised cholesterol.

No information was available to allow an assessment of the safety of kava beverage consumption in pregnant or lactating females, adolescents or children[12]. Therefore it is not possible to draw a conclusion on the safety of kava beverage consumption by these population subgroups. Kava should not be consumed by these population groups.

General description
Reports of hepatotoxicity associated with medicinal products containing kava extracts emerged in Europe in 1998[28]. The method of extraction for herbal kava preparations, drug interactions with other medications, the use of non-Noble kava varieties in the manufacture of herbal preparations and potential contamination of kava used for herbal preparations with aflatoxin-producing fungi, have all been proposed as the cause for a sudden appearance of these adverse events[12]. The chemical composition of kava extracts differs from kava beverage and there is little evidence of significant adverse health effects in Pacific communities with high levels of kava beverage consumption. Kava consumption may impair the ability to safely operate a motor vehicle[18].
Consumption patterns: Following export restrictions being imposed in 2007, kava was not available in Australia as a commercial food commodity until December 2021. No information on kava consumption is captured by the 2011-2012 Nutrition and Physical Activity Survey[29] or the 2012-2013 Australian Aboriginal and Torres Strait Islander Health Survey[30]. In the 2007 National Drug Strategy Household Survey, 1.8 % of Australians 14 years and older reported being offered or having the opportunity to use kava within the last 12 months[31]. This was highest for males in the 20-29 year old age group at 3.4%[31]. As part of the advice provided to the Department of Health in 2016, the Advisory Committee on Medicine Scheduling highlighted that several jurisdictions have had historical problems with kava misuse, especially with powder and liquid forms[32]. Kava was introduced into Arnhem Land in 1982. It was thought that kava beverage may provide a safer alternative to alcohol[33]. Kava consumption remained prevalent in select First Nations communities in East and West Arnhem land, despite import restrictions having been imposed[33]. The extent of kava use and resulting effects on public health in these populations remains poorly understood[33].
Risk factors and risk mitigation: Key risk factors: • Contamination of imported product with parts of the kava plant that are not peeled roots, rhizomes or basal stems, or non-Noble kava varieties. • Potential contamination or spoilage of kava through the supply chain (from primary production though to the final kava beverage preparation) with bacterial and/or viral pathogens, mycotoxin-producing moulds or other toxin-producing microorganisms. Noting however, there was insufficient information available on the persistence or growth of pathogens in kava beverage for risk assessment. • Kava beverage products that are not prepared and consumed in-line with historical practices, such as shelf-stabilised pre-prepared kava products, kava extracts or kava products containing food additives or processing aids. • Introduction of kava into a population without culturally established consumption patterns. • Influx of kava into communities that demonstrate kava beverage consumption levels indicative of substance abuse, such as select communities in West and East Arnhem land[33]. Risk mitigation strategies: • Imported kava for sale should be made with peeled roots, rhizomes or basal stems. Harvested product should be free of leaves, bark, pests and mould, and be stored and transported under conditions that minimise spoilage and/or mould growth. • Kava plants should be cultivated using Good Agricultural Practices and Good Handling Practices, and be a kava variety with a history of safe use (Appendix 1). • Only potable water should be used to prepare kava beverage[22] • Kava beverage should be prepared in-line with historical cultural practices, not stored or transported, and be consumed soon after preparation. • Products for sale in Australia should display the requisite warnings, as specified in the Australia New Zealand Food Standards Code. • Continued enforcement of individual State and Territory-specific restrictions on the import and sale of kava.

General description

Surveillance information:

In the four years prior to the 2007 restriction on commercial kava imports, an average of 70 tonnes of kava, worth approximately $850, 000 AUD, was imported into Australia per annum[§].

The current quantities of kava plant product brought into Australia in personal luggage is not recorded by Australian Border Force.

Standards or guidelines

Australia

Standard 1.1.1 of the Australia New Zealand Food Standards Code (the Code) states that food for sale must not consist of, or have as an ingredient or a component, kava or any substance derived from kava, unless expressly permitted by Standard 2.6.3.

Standard 1.1.2 defines kava root as the peeled root or peeled rootstock of a Noble variety of kava that is named in section 3.1 of the *Regional Standard for Kava Products for use as a Beverage When Mixed with Water* (CXS 336R-2020).

Standard 2.6.3 of the Code states that prohibition of kava does not apply to kava root (raw or dried), or the beverage obtained by aqueous suspension of kava root, and must not contain as an ingredient or component any substance used as a food additive or processing aid.

Kava products are required to display the warning statements 'use in moderation' and 'may cause drowsiness'.

Codex

Regional Standard for Kava Products for use as a Beverage When Mixed with Water (CXS 336R-2020) was adopted by the 43rd Session of the joint Food and Agriculture Organization and World Health Organization Codex Alimentarius Commission (2020). This standard applies to the roots, rhizomes or basal stems, fresh or dried, of Noble cultivars of the kava plant (*P. methysticum* G. Forst)[22].

The following Codex Standards are also relevant in the prevention of foodborne illnesses associated with kava:

- Codex general principles of food hygiene (CXC 1-1969)
- Code of Hygienic Practice for Low-Moisture Foods (CC 75-2015).

Pacific Nations

Funded by the Australian and New Zealand Governments, the Pacific Horticultural & Agricultural Market Access (PHARMA) Program has worked with Pacific Nations to develop standards for kava to ensure product safety. Through this program, Vanuatu[34], Fiji[35], Samoa[36] and Tonga[37] have developed standards for the production of kava suitable for export to produce a food beverage.

Management approaches

Australia – Kava is currently classified as a drug under the Customs (Prohibited Imports) Regulations 1956 and requires permission to be imported commercially into Australia.

Kava (including extracted kavalactones) is listed as a Schedule 4 medicine in the current Poisons Standard when used in preparations for human use, except when included in products on the Australian Register of Therapeutic Goods. Prior to 2007, the whole or peeled rhizome of kava was exempt from scheduling in the poisons standard, instead being managed under the National Code of Kava Management. However, following an Australian Government policy effort to reduce the kava abuse in select First Nations communities, import restrictions were imposed that stopped the commercial importation of kava into Australia[32]. In 2008, the National Drugs and Poisons Schedule Committee (NDPSC) concluded that the whole or peeled rhizome form of kava should no longer be exempt from scheduling, recognising the hazards to public health associated with kava substance abuse and that import restrictions were in place. This position was reaffirmed by the NDPSC in 2009 and again by the Advisory Committee on Medicine Scheduling in 2016[32].

On 11 October 2019, the Prime Minister, the Hon Scott Morrison MP, announced that the Australian Government is launching the kava pilot program, which involves the relaxation of kava-related import prohibitions with the introduction of a permit-based system. From 1 December 2021 commercial importation of kava occurred under phase 2 of this kava pilot program.

§ Information supplied to the Australian Department of Foreign Affairs and Trade by Australian Border Force.

Management approaches
The Government's decision on future kava importation requirements will be informed by monitoring and evaluation conducted throughout the kava pilot program[38]. In November 2021, FSANZ raised an Urgent Proposal to review the kava provisions of the Code, following a request from the Chair of the Food Ministers' Meeting, Senator the Hon Richard Colbeck, and in response to the Australian Government's decision to allow the commercial importation of kava. On 23rd March 2022, following work undertaken as part of FSANZ's Urgent Proposal, additional changes to the Code were notified: • prohibiting explicitly the use of processing aids or additives as ingredients in kava; and • defining kava as being of a Noble variety only. FSANZ is required to review all changes as part of the Urgent Proposal, within 12 months of this Notification. As of December 2021, kava import permits can be obtained from the Office of Drug Control (ODC). Incoming passengers into Australia are allowed to bring up to 4kg of kava (in the root or dried form) into Australia in their accompanied baggage[39]. State and Territory-specific restrictions prohibit kava for non-medicinal purposes in Western Australia and the Northern Territory. **Germany –** In 2002, the German Federal Institute for Drugs and Medical Devices (Bundesinstitut für Arzneimittel und Medizinprodukte; BfArM) cancelled the drug registrations of products containing kava extracts, based on the hepatotoxicity concerns and a lack of evidence to support clinical efficacy. These measures effectively banned kava products in Germany and created the precedence used to impose kava restrictions in other international markets. The decisions taken by the BfArM were overturned by the courts in 2014 when it was determined that the available evidence did not justify the regulatory action taken[40]. Approval was again withdrawn in 2019 when BfArM determined that there was a lack of data demonstrating anxiolytic effects[41]. **Vanuatu -** The Kava Act No. 7 (2002) prohibits the sale or export of tudei kava and wild kava, unless requested to do so by a person outside Vanuatu[42].

This risk statement was compiled in: March 2022

References

1 Lebot V, Merlin M, Lindstrom L. Kava: The Pacific Drug. Yale University Press, 1992.

2 Cairney S, Maruff P, Clough AR. The neurobehavioural effects of kava. *Aust N Z J Psychiatry* 2002; **36:** 657–62. https://doi.org/10.1046/j.1440-1614.2002.01027.x.

3 Aporosa SA. Kava and Ethno-cultural Identity in Oceania. In: Ratuva S, ed. The Palgrave Handbook of Ethnicity. Singapore: Springer Singapore, 2019: 1923–37.

4 Singh YN. Kava: an overview. *J Ethnopharmacol* 1992; **37:** 13–45. https://doi.org/10.1016/0378-8741(92)90003-a.

5 FAO/WHO. Kava: a review of the safety of traditional and recreational beverage consumption. Technical Report. Rome 2016. http://www.fao.org/3/i5770e/i5770e.pdf (accessed July 2021).

6 Lebot V, Lèvesque J. The origin and distribution of kava (Piper methysticum Forst. F., piperaceae): a phytochemical approach. Allertonia, 1989.

7 Lebot V, Lèvesque J. Genetic control of kavalactone chemotypes in Piper methysticum cultivars. *Phytochemistry* 1996; **43:** 397–403. https://doi.org/10.1016/0031-9422(96)00209-9.

8 LaPorte E, Sarris J, Stough C, Scholey A. Neurocognitive effects of kava (Piper methysticum): a systematic review. *Hum Psychopharmacol* 2011; **26:** 102–11. https://doi.org/10.1002/hup.1180.

9 Lebot V, Do TKT, Legendre L. Detection of flavokavins (A, B, C) in cultivars of kava (Piper methysticum) using high performance thin layer chromatography (HPTLC). *Food Chem* 2014; **151:** 554–60. https://doi.org/10.1016/j.foodchem.2013.11.120.

10 Dragull K, Yoshida WY, Tang C-S. Piperidine alkaloids from Piper methysticum. *Phytochemistry* 2003; **63:** 193–98. https://doi.org/10.1016/s0031-9422(03)00111-0.

11 Lechtenberg M, Quandt B, Schmidt M, Nahrstedt A. Is the alkaloid pipermethystine connected with the claimed liver toxicity of Kava products? *Pharmazie* 2008; **63:** 71–74.

12 Food Standards Australia New Zealand. Supplementry Document 1: Risk and technical assessment. Review of the Kava Standard 2021 (accessed March 2022).

13 Tang Y, Fields C. A UHPLC-UV Method Development and Validation for Determining Kavalactones and Flavokavains in Piper methysticum (Kava). *Molecules* 2019; **24.** https://doi.org/10.3390/molecules24071245.

14 Teschke R, Lebot V. Proposal for a kava quality standardization code. *Food Chem Toxicol* 2011; **49:** 2503–16. https://doi.org/10.1016/j.fct.2011.06.075.

15 Anke J, Ramzan I. Pharmacokinetic and pharmacodynamic drug interactions with Kava (Piper methysticum Forst. f.). *J Ethnopharmacol* 2004; **93:** 153–60. https://doi.org/10.1016/j.jep.2004.04.009.

16 Mathews JM, Etheridge AS, Valentine JL, et al. Pharmacokinetics and disposition of the kavalactone kawain: interaction with kava extract and kavalactones in vivo and in vitro. *Drug Metab Dispos* 2005; **33:** 1555–63. https://doi.org/10.1124/dmd.105.004317.

17 Foo H, Lemon J. Acute effects of kava, alone or in combination with alcohol, on subjective measures of impairment and intoxication and on cognitive performance. *Drug Alcohol Rev* 1997; **16:** 147–55. https://doi.org/10.1080/09595239700186441.

18 Wainiqolo I, Kafoa B, Kool B, et al. Driving following Kava Use and Road Traffic Injuries: A Population-Based Case-Control Study in Fiji (TRIP 14). *PLoS One* 2016; **11:** e0149719. https://doi.org/10.1371/journal.pone.0149719.

19 Li XZ, Ramzan I. Role of ethanol in kava hepatotoxicity. *Phytother Res* 2010; **24:** 475–80. https://doi.org/10.1002/ptr.3046.

20 Kandukuru P, Huang AS, Dong J, Bittenbender HC, Li Y. Rapid identification of bacterial isolates from aqueous kava (Piper methysticum) extracts by polymerase chain reaction and DNA sequencing. *Lett Appl Microbiol* 2009; **49:** 764–68. https://doi.org/10.1111/j.1472-765X.2009.02739.x.

21 Dong J, Kandukuru P, Huang AS, Li Y. PCR-DGGE analysis of bacterial community dynamics in kava beverages during refrigeration. *Lett Appl Microbiol* 2011; **53:** 30–34. https://doi.org/10.1111/j.1472-765X.2011.03065.x.

22 Codex Alimentarius Commission. Regional Standard for Kava Products For Use As A Beverage When Mixed With Water. CXS 336R-2020. FAO/WHO 2020. http://www.fao.org/fao-who-https://www.fao.org/fao-who-codexalimentarius/sh-proxy/en/?lnk=1&url=https%253A%252F%252Fworkspace.fao.org%252Fsites%252Fcodex%252FStandards%252FCXS%2B336R-2020%252FCXS_336Re.pdf%252Fcodex%252FMeetings%252FCX-701-43%252FWorking%2Bdocuments%252Fcac43_04_Add.1_e_rev1.pdf (accessed December 2021).

23 Weaver CM, Trucksess MW. Determination of Aflatoxins in Botanical Roots by a Modification of AOAC Official MethodSM 991.31: Single-Laboratory Validation. *Journal of AOAC INTERNATIONAL* 2010; **93:** 184–89. https://doi.org/10.1093/jaoac/93.1.184.

24 Teschke R, Sarris J, Schweitzer I. Kava hepatotoxicity in traditional and modern use: the presumed Pacific kava paradox hypothesis revisited. *Br J Clin Pharmacol* 2012; **73:** 170–74. https://doi.org/10.1111/j.1365-2125.2011.04070.x.

25 Rychetnik L, Madronio CM. The health and social effects of drinking water-based infusions of kava: a review of the evidence. *Drug Alcohol Rev* 2011; **30:** 74–83. https://doi.org/10.1111/j.1465-3362.2010.00184.x.

26 Clough AR, Jacups SP, Wang Z, et al. Health effects of kava use in an eastern Arnhem Land Aboriginal community. *Intern Med J* 2003; **33:** 336–40. https://doi.org/10.1046/j.1444-0903.2003.00405.x.

27 Clough A. Enough! or too much. What is 'excessive' kava use in Arnhem Land? *Drug Alcohol Rev* 2003; **22:** 43–51. https://doi.org/10.1080/0959523021000059820.

28 World Health Organisation. Assessment of the risk of hepatotoxicity with kava products. Geneva 2008. https://apps.who.int/iris/bitstream/handle/10665/43630/9789241595261_eng.pdf (accessed September 2021).

29 ABS. National Nutrition and Physical Activity Survey, 2011-12. Canberra 2014.

30 ABS. Australian Aboriginal and Torres Strait Islander Health Survey, 2012-13. Canberra 2015.

31 Australian Institute Of Health And Welfare. National Drug Strategy Household Survey, 2007. Canberra 2008. https://www.aihw.gov.au/getmedia/59dd97b5-a40b-47cf-99bd-7f0dd860fd1d/ndshs07-df.pdf.aspx (accessed July 2021).

32 Australian Government Department of Health. Final decisions and reasons for decisions by delegates of the Secretary to the Department of Health. Notice under subsections 42ZCZS and 42ZCZX of the Therapeutic Goods Regulations 1990. Canberra 27 October 2016. https://www.tga.gov.au/sites/default/files/scheduling-delegates-final-decisions-july-2016_for_web_upload.pdf (accessed August 2021).

33 Butt J. Review of kava use among Aboriginal and Torres Strait Islander people. Australian Indigenous HealthBulletin. http://healthbulletin.org.au/wp-content/uploads/2019/04/kava-bulletin-web.pdf (accessed July 2021).

34 The National Quality Standard for Kava Export. Vanuatu. Pacific Horticulture & Agriculture market Access Program: Pacific Horticulture & Agriculture market Access Program 2017. https://phamaplus.com.au/wp-content/uploads/2017/07/Vanuatu_Quality_Standard_ecopy.pdf (accessed September 2021).

35 Fiji Ministry of Agriculture. The Fiji Kava Standard. Pacific Horticulture & Agriculture market Access Program: Pacific Horticulture & Agriculture market Access Program 2017. https://phamaplus.com.au/wp-content/uploads/2017/03/Fiji_Kava_Standard_ecopy.pdf (accessed September 2021).

36 Samoa 'Ava Standard. Pacific Horticulture & Agriculture market Access Program: Pacific Horticulture & Agriculture market Access Program 2018. https://phamaplus.com.au/wp-content/uploads/2018/06/Samoa_Ava_Standard-English-Final_ecopy.pdf (accessed September 2021).

37 Government of Tonga. Tonga Kava Quality Standard. Pacific Horticulture & Agriculture market Access Program: Pacific Horticulture & Agriculture market Access Program 2020. https://phamaplus.com.au/wp-content/uploads/2020/06/Tonga_Kava_Quality_Standard_Final_e-copy-1.pdf (accessed July 2021).

38 Office of Drug Control. Kava Pilot. Phase 2: Allowing the commercial importation of kava. Canberra 23 March 2020. https://www.odc.gov.au/sites/default/files/consultation-kava-pilot-phase-2-allowing-commercial-importation-kava.pdf (accessed July 2021).

39 Customs (Prohibited Imports) (Kava) Approval 2019. Canberra. https://www.legislation.gov.au/Details/F2019L01616 (accessed July 2021).

40 Kuchta K, Schmidt M, Nahrstedt A. German Kava Ban Lifted by Court: The Alleged Hepatotoxicity of Kava (Piper methysticum) as a Case of Ill-Defined Herbal Drug Identity, Lacking Quality Control, and Misguided Regulatory Politics. *Planta Med* 2015; **81:** 1647–53. https://doi.org/10.1055/s-0035-1558295.

41 Thomsen M, Schmidt M. Health policy versus kava (Piper methysticum): Anxiolytic efficacy may be instrumental in restoring the reputation of a major South Pacific crop. *J Ethnopharmacol* 2021; **268:** 113582. https://doi.org/10.1016/j.jep.2020.113582.

42 The Kava Act 2002. Republic of Vanuatu. Port Vila. Commencement (2008). https://biosecurity.gov.vu/images/Export/kava-act-2002.pdf (accessed July 2021).

Appendix 1 – Noble kava plant varieties with a history of safe use as kava beverage

Samoa[22,36]

Ava La'au
Ava Le'a
Ava Loa
Ava Mumu
Ava Talo

Fiji[22,35]

Damu
Dokobana loa
Dokobana vula
Loa kasa balavu
Loa kasa leka
Matakaro balavu
Matakaro leka
Qila balavu
Qila leka
Vula kasa balavu
Vula kasa leka
Yalu
Yonolulu

Tonga[22,37]

Kava 'Akauhina
Kava 'Akaukula
Kava Fulufulu
Kava Kofe
Kava Lekahina
Kava Lekakula
Kava Valu

Vanuatu[22,34,42]

Ahouia
Amon
Asiyai
Bir Kar
Bir Sul
Biyaj
Borogoru
Borogu
Ge gusug
Ge vemea
Ge wiswisket
Gorgor
Kelai (or Miaome)
Leay
Melmel (or Sese)
Melomelo
Miela
Naga miwok
Olitao
Palarasul
Palasa
Palimet
Pia
Poivota
Pualiu
Puariki
Silese
Urukara

‡Hawaii[22]

Hanakapi'ai
Hiwa
Honokane Iki
Kumakua
Mahakea
Mapulehu
Moi
Nene
Opihikao
Pana'ewa
Papa 'Ele'ele
Papa 'Ele'ele Pu 'upu'u
Papa kea

‡Papua New Guinea[22]

Kau kupwe

‡Federated States of Micronesia[22]

Rahmwahnger

‡Solomon Islands[22]

Feo
Tahu
Temo

‡ FSANZ is unaware of any local kava quality and safety standards that are specific to kava produced in this region.