

## The poisoning of 'awa: the non-traditional use of an ancient remedy

*Abstract:* In the traditional practice of Native Hawaiians, 'awa (*Piper methysticum*) has long been revered as a medicine, a sacred plant central to religious ceremony, and a social drink. In the late 1990s, 'awa attracted global attention as an herbal alternative to existing pharmaceuticals for reducing stress, anxiety, pain and assorted ailments. Marketed since 1994 as a dietary supplement, within seven years 'awa had earned the title of a "superstar" and quickly became one of the top eight herbal remedies in an expanding \$18 billion-plus herbal remedy industry. In one study, the plant was even argued to possess chemopreventive properties, when cancer incidence and kava consumption in Pacific island communities were correlated. In 2002, however, the remedy was banned in several European countries, after case reports of liver toxicity allegedly associated with its nontraditional use surfaced. In the United States (US), the Food and Drug Administration issued a consumer advisory leading several retailers to voluntarily withdraw products containing 'awa from their shelves. These actions have sent shock waves throughout Pacific Island communities seeking to derive economic benefit from a relatively new and little-regulated industry. Moreover, they threaten the vitality of centuries of Native Hawaiian cultural practice. Clinical studies advocating both sides of the safety debate have been published, as producers, marketers and users attempt to influence government action. At the same time, issues of cultural exploitation, religious freedom, traditional practice, and native intellectual property rights are absent from the debate, leaving the future of native practice hanging in the balance. Whether or not the herb's status is restored, the situation raises critical questions: Is 'awa toxic? Or, does the poison derive from its use outside of traditional practice?

Harriet Makia Awana O'Sullivan\*  
Kehaulani Lum\*

### Introduction

In the September 2001 issue of the Pacific Health Dialog, we explored the issues surrounding 'awa (also known on the market as *kava*, *sakau* and *ava*) use, highlighted the existing literature, placed the discussion in an indigenous context, and shed light on the tensions fueled by culturally inappropriate practice. Our focus rested primarily in the realm of Native Hawaiian practice, and one of our primary concerns was the extent to which the non-traditional use, or abuse, of 'awa might threaten that free practice.

In less than two years, the possible has become the probable, as countries around the globe have imposed bans on the importation and sale of 'awa-containing products, after reports surfaced of severe hepatotoxicity, possibly related to its use. This article discusses the current controversy and reiterates concern for native practice, particularly, modes of action to ensure protection from excessive regulation and further exploitation.

### The rise and fall of 'awa

According to the World Health Organization (WHO), since 1999, several cases of severe hepatic toxicity in people using 'awa-containing herbal products were reported in

Europe and the United States (US). "By late 2002, there were 10 reports of patients requiring liver transplants (8 in Europe and 2 in the US; one died post-transplant) following hepatic failure associated with the use of kava-containing products. This led to various worldwide regulatory measures against kava-containing products, ranging from a total ban of such products, to consumer advisories warning about the adverse effects with kava<sup>1</sup>."

Germany's Federal Institute for Drugs and Medical Devices (BfArM) was the first to withdraw all 'awa-containing pharmaceutical and homeopathic products with dilutions up to D4. BfArM was said to have received "39 spontaneous reports of liver injury associated with the use of kava-containing products, and of these there were three fatalities<sup>2</sup>."

Following Germany's lead, Ireland's Irish Medicines Board urged the voluntary withdrawal of all kava-containing products. Switzerland moved kava ethanol extract products from OTC (over-the-counter) to "pharmacy only status." France initiated a ban. Singapore proceeded to gazette kava-kava and its constituents under the Poisons Act to prohibit importation. The United Kingdom issued an order prohibiting the supply of medicinal products containing kava<sup>3</sup>. In Canada, the Committee on Safety of Medicines required a stop-sale of all kava-containing products, requested manufacturers and importers to recall all kava-containing products from all levels of distribution, and added kava to its unacceptable risk potential guide, thereby banning all kava-containing products from the Canadian market<sup>4</sup>.

In August 2002, Australia's Therapeutic Goods Administration (TGA) initiated a voluntary recall of all complementary medicines containing kava following the death of a

\*No biographical information supplied

woman who had used a medicine containing the product<sup>5</sup>. “We understand that the woman had been taking several complementary medicines,” announced the Hon. Trish Worth MP, “One product she was taking contained kava (*Piper methysticum*) in combination with two other herbs. She had been taking this product for only four months before she presented with liver failure and the product is suspected to be the most likely cause of her illness<sup>6</sup>.” The TGA also issued safety alerts to Australian consumers and health practitioners about concerns, “the most serious of which involved death or liver transplantation<sup>7</sup>.” Interestingly, the product’s scarcity seems to have elicited a black market of sorts in parts of the country. Last December, Arnhem Land authorities reportedly seized a commercial quantity of ‘*awa*, “with a street value of more than \$400,000” that was allegedly bound for Aboriginal communities<sup>8</sup>. In Arnhem Land, at least, the herb apparently has attained illicit drug status. Last year, South Africa joined the list of countries prohibiting ‘*awa* on the basis of accumulated evidence from the WHO and regulatory authorities worldwide<sup>9</sup>.

Here at home, the U.S. Food and Drug Administration (FDA) advised consumers in March, 2002 of the potential risk of severe liver injury associated with the use of ‘*awa*-containing dietary supplements. “Although liver damage appears to be rare,” it declared, “FDA believes consumers should be informed of this potential risk.” Signs of illness associated with jaundice and brown urine were identified as symptoms of serious liver disease, and consumers and their health care professionals were urged to report any cases of liver and other injuries to the FDA’s MedWatch program<sup>10</sup>. An investigation into two U.S. cases of liver failure associated with ‘*awa*-containing supplements, one a woman aged 45 years, the other a 14 year-old girl, both previously healthy, prompted the CDC to further advise caution by persons who have pre-existing liver disease or at risk for liver disease<sup>11</sup>.

Whether or not the United States follows the prohibition trend depends, one suspects, on case reports, science-based literature, and politics. Indeed, in a pre-emptive manner, the American Herbal Products Association (AHPA), the leading botanical trade association representing growers, processors, manufacturers and marketers of herbal products, quickly adopted new cautionary language to appear on food and dietary supplement products containing ‘*awa*, declaring: “Caution: Ask a healthcare professional before use if you have or have had liver problems, frequently use alcoholic beverages, or are taking any medication. Stop use and see a doctor if you develop symptoms that may signal liver problems (e.g., unexplained fatigue, abdominal pain, loss of appetite, fever, vomiting, dark urine, pale stools, yellow eyes or skin)<sup>12</sup>.” As Michael McGuffin, AHPA President explained, “Although no actual relationship be-

tween the use of kava and any liver problem has been established by the FDA or any scientific reviews, it is sensible that consumers of kava are informed in the light of the recent case reports<sup>13</sup>.”

Because meaningful institutional links between complementary and Western medicine are yet in incubation, on the political front, controversy, rather than collaboration, dominates. A few months ago, the editors of the Journal of the American Medical Association called for tighter regulation of dietary supplements, stipulating that, “Because many dietary supplements have or promote biological activity, they must be considered active drugs and regulated as such<sup>14</sup>.” Concerns about Internet availability, standardization, adulteration of botanical preparations, interactions between herbs and drugs, and lack of adverse reaction drove their claims.

Likewise, Dr. Donald Marcus, MD, writing in the *New England Journal of Medicine*, called for new legislative regulations of botanical medicines. “The medical community has been slow to respond to public health issues and educational problems resulting from weakened regulation of dietary supplements. However, the numerous reports of adverse effects and deaths associated with botanical health products, the distribution and widespread sale of adulterated products, and the marked increase in misleading promotional claims on the Internet demand prompt attention to protect the public health...vigorous and concerted action is needed to educate the public and Congress about the critical need for new regulatory safeguards

---

**Because meaningful institutional links between complementary and Western medicine are yet in incubation, on the political front, controversy, rather than collaboration, dominates.**

---

and for the government funding to implement them<sup>15</sup>.” With ‘*awa* placing among the top eight most commonly used herbal supplements, alongside ginkgo biloba, St. John’s wort, echinacea, ginseng, garlic, saw palmetto and valerian root, alerts from individuals of such stature cannot be ignored.

At the same time, FDA’s recent ban of the herbal supplement *ephedra*, coming on the heels of adverse reaction case reports, heated legislative debate, media attention, and consumer concerns, invokes precedent. Perhaps, lacking *ephedra*’s recognition, widespread use, and clinical review, ‘*awa* has escaped the same glare. Nonetheless, the shift of ‘*awa*’s status in less than three years leads one to ponder how it is that, “from one moment to the next, a traditional drink from the Pacific spontaneously mutated from a safe and effective drug into a dangerous substance<sup>16</sup>.”

### **A crisis in the marketplace**

To observers, it should come as no surprise that the dramatic drop in ‘*awa* exports has negatively impacted

Hawai'i and Pacific Island communities whose brief experience with the plant as a crop industry envisioned potential multi-million dollar gains. Hawai'i's Agricultural Statistics Service, an affiliate of the Hawai'i and US Departments of Agriculture, estimated that the State's farm revenues from the sale of *'awa* dropped 88 percent from 2001 to 2002. Production totals fell accordingly.

"Worldwide production of kava was severely curtailed in 2002, when certain European countries placed restrictions on the sale of food supplements and herbal medicines containing kava and/or kava extracts. Restrictions on kava products were also eventually adopted by countries such as Japan, Singapore, Canada, and the United Kingdom. Hawai'i farmers felt the impact of this ban almost immediately as sales of kava dropped significantly during 2002. The restrictions resulted in the loss of kava export earnings from the region and particularly the four major kava-producing FICs (Forum Island Countries, a designation of the United Nations Development Programme) namely, Fiji, Samoa, Tonga and Vanuatu to the European markets and to the USA. This has caused considerable loss of exports and falls in the domestic price of kava, resulting in declining incomes for farmers and businesses<sup>17</sup>."

Since 2001, according to separate reports, the loss of local export earnings in the Pacific exceeded US\$200 million and thousands of jobs in both the South Pacific and Europe. "The ban especially affected the incomes of rural farmers and processors as well as foreign exchange, as exports are seriously adversely affected<sup>18</sup>."

As a result, industry is treating the depression seriously. On the international front, the first-ever European-Pacific Kava Stakeholders meeting was held in Brussels in August 2003, bringing together stakeholders impacted by the turn of events to "explore ways to re-establish the kava trade between the European Union (EU) member states and South Pacific countries." Present at the meeting were a cross section of European manufacturers, regulatory agencies, kava exporters, scientists and experts and organizations such as the CDE, PROE INVEST, PIFS, Commonwealth Secretariat (COMSEC), European Commission (EC), the World Health Organization (WHO), and the Technical Centre for Agricultural and Rural Cooperation ACP-EU (CTA).

The stakeholders' discussion, among other things, focused on the findings of a study titled, "In-Depth Investigation of EU Member States Market Restrictions on Kava Products," which was commissioned by the EU CDE, on behalf of South Pacific kava-producing countries and the Pacific Island Forum Secretariat, and conducted by Phytopharm Consulting at the end of March 2003. Essentially, the report critically evaluated "whether or not the restrictions placed on kava by some European health authorities are justified." Its findings spoke for "the safety and efficacy of kava in the symptomatic treatment of anxiety and

stress and, in most aspects, strongly supported the scientists' charges that the kava ban was not justified based on the available scientific and medical evidence." The report further criticized the German Health Authority "...for having ignored and misinterpreted important scientific data in its evaluation and for creating an obviously distorted image for kava<sup>19</sup>."

With much to lose, the stakeholders appear to be actively attacking the bans, embarking on an ambitious plan that involves increased education, lobbying, circulation of scientific literature, and, among other things, strengthening the industry in the Pacific with appropriate training and standards compliance. Further, in early April, 2004, dignitaries from four Pacific Island countries, led by Dr. Joerg Gruenwald, the German consultant and author of the *Phytopharm Report*, plan to visit Brussels with the intent of lobbying for the lifting of the *'awa* ban. "In June this year, we plan to bring all kava stakeholders from overseas and Pacific countries to meet in Fiji to resolve their differences on the kava issue. We expect scientists, pharmaceutical companies and government officials at this roundtable," said Ratu Josateki Nawalowalo, chairman of Fiji's Kava Council<sup>20</sup>.

In Hawai'i, where efforts to transform *'awa* into a main crop system have been seriously stymied, interest in the global dialogue seems to lack the backing of the ruling parties. Research and development, public awareness, the creation of an annual festival, and an internet forum<sup>21</sup> have been promoted by what appears to be a loose, but committed network of farmers, University of Hawai'i scientists, marketers, and scholars. Unlike its Pacific neighbors, the State does not have an official presence in the international forum; an inconvenient by-product, perhaps, of its political status in the United States. From available information, there appears to have been no native representative at the Brussels Stakeholders meeting, and no clear role for the State of Hawai'i in upcoming symposia, raising the important question, "Who is representing the Native Hawaiian community's interest in the debate?"

### **Science-based literature is on the rise, but still insufficient**

In the two years since Germany enacted its ban, the scientific literature on *'awa* has soared. A PubMed search, for example, tracks more than two hundred seventy articles (several times more than existed prior to the controversy) and on various sides of the debate. Some advocate product regulation. Others call for medical supervision. Several suggest a lack of clinical data, and a few cite adulterations in product or process as explanations for how *'awa*, traditionally used in root form, but sold in Europe in extract capsule form, has suddenly become toxic.

Studies range from the "Potential health risks of complementary alternative medicines in cancer patients<sup>22</sup>," "High

Prevalence of Potentially Hepatotoxic Herbal Supplement Use in Patients with Fulminant Hepatic Failure<sup>23</sup>,” to “Aqueous kava extracts do not affect liver function tests in rats<sup>24</sup>.”

Reports have likewise been published on hepatic injury due to traditional aqueous extracts in New Caledonia<sup>25</sup>, a lack of evidence of kava-related hepatotoxicity in native populations in Samoa<sup>26</sup>, and the toxicity of ‘*awa* alkaloid in stem peelings and leaves<sup>27</sup>.

Scarce among the new literature, however, are observations documenting the experience of the traditional Native Hawaiian healer or ceremonial practitioner, whose knowledge and use of ‘*awa* transcends centuries. This, though the pharmacopoeia of the Hawaiian *kahuna lā‘au lapa‘au* (*practitioner*) has been acknowledged by past researchers as a sophisticated match to a complex body of diagnostic knowledge. “Whenever Polynesian medicinals are discussed, the first question is usually about *awa*. . .,” wrote F.L. Tabrah, M.D. and B.M. Eveleth, M.D., in their 1966 study<sup>28</sup>.

The lack of traditional use data and the failure of current research to acknowledge the significance of native experience is not novel, but it is particularly disconcerting, given that Hawaiian practice, much like that of Native American Indians, is not a visible part of the nation’s daily life. “No one knows more about the healing resources of tropical forests than the indigenous peoples who depended on them for centuries<sup>29</sup>,” observed Michael Brown in his work on ethnobotany in the Peruvian rain forest. He might easily have said the same of Hawaiian practitioners.

Ironically, while it is the lore of Polynesian practice that drives consumer interest in ‘*awa*, the practitioner’s voice is not informing the scientific, peer-reviewed debate in sufficient measure. This missing link raises the important question: Is ‘*awa* toxic? Or, is its use in a non-traditional context, devoid of *kahuna* presence, the poison?

## Protecting native practice

Around the globe, indigenous groups are pushing for control over their botanical knowledge and resources. If the Native Hawaiian community is committed to protecting free access to this traditional plant and its use, it too, must cohesively and vigilantly join the debate.

Whether the future of ‘*awa* rests in permanent bans, regulation as a prescription pharmaceutical, or a return to its “miracle herb” status, Native Hawaiian practice finds itself at a critical juncture. The ‘*awa* controversy is a vital test case that says as much about this remedy as it does about the

hundreds of other remedies in its heritage, as well as, arguably, its biogenetic and agricultural material.

The absence of a Native Hawaiian voice leaves others to define safety and appropriate practice. It allows others to research, commercialize, patent and market herbal remedies in ways that threaten the community’s heritage. Already, the U.S. Patent and Trademark Office has awarded several patents relating to ‘*awa* to non-native corporations. It supports the abuse of products handed down over the centuries, and encourages regulation in a foreign context. It has the potential of wrenching from native pharmacopoeia and practice a key element, while transferring access, power and legal protection to non-native entities and regulators. It diminishes what Michael Brown calls the necessary “social capital” of practitioners, the “recognized scientific credentials and links to prevailing networks of knowledge that permit individuals (or the corporations for

**Indigenous communities are confronting issues of “biopiracy,” “bioprospecting,” and cultural exploitation with varying degrees of success. In response to growing public recognition of the value of folkloric knowledge ... is already under way in many parts of the world.**

which they work) to make credible intellectual property claims...<sup>30</sup>.” In Brown’s opinion, “indigenous shamans and herbalists lack social capital, at least within the developed world’s scientific networks<sup>31</sup>.” That is, the network in which the ‘*awa* debate is currently taking place.

Indigenous communities are confronting issues of “biopiracy,” “bioprospecting,” and cultural exploitation with varying degrees of success. In response to growing public recognition of the value of folkloric knowledge, a rebalancing of rights and responsibilities is already under way in many parts of the world. Governments and local communities now routinely set stringent conditions on bioprospecting projects. Foreign scientists must commit themselves to close collaboration with local counterparts, provide host-country institutions with equipment and training, and agree to profit-sharing arrangements. Indigenous leaders may demand that visiting scholars pay for access to local expertise and perhaps provide communities with badly needed health clinics or school buildings. Scientists increasingly reckon with local control of the information they collect, especially if it touches upon native religious practices<sup>32</sup>.” Native Hawaiian community advocacy may take many forms:

- a) Consumer education, particularly emphasizing culturally appropriate practice;
- b) Underwriting and conducting scientific research;
- c) Developing legal strategies to affirm native practice, diminish predatory practices, and protect cultural heritage;
- d) Collaborating with other Pacific nations;
- e) Participating in the international debate (i.e. WHO);
- f) Promoting bioprospecting protection legislation (a general bill has been introduced in the Hawai‘i state legislature);

- g) Lobbying key Congressional representatives; and/or,  
h) Initiating licensing agreements with the pharmaceutical industry.

Alternatively, the community may respond through acts of civil disobedience, much as their ancestors did in the late 1800s, when confronted with anti-*lā'au* measures. As we were reminded by the late master practitioner and chairperson of the statewide *K puna Lā'au Lapa'au o Hawai'i*, Papa A. Henry Auwae: The practice may simply "go underground"<sup>33</sup>.

## References

1. Safety Issues Involving Herbal Medicines: Kava as a Case Study. *WHO Pharmaceuticals Newsletter*, 2003; 5: 8.
2. Federal Institute for Drugs and Medical Devices (BfArM) - BfArM Withdraws Marketing Authorisation for Kava-Kava and Kavain Containing Medicinal Products because of Serious Liver Toxicity: Assessment Report, June 14, 2002, available in Kava and Liver Toxicity: Frequently Asked Questions. *Health Canada Online*, [www.hcc.gc.ca/english/protection/warnings/2002](http://www.hcc.gc.ca/english/protection/warnings/2002). Accessed August, 2002.
3. Pharmaceuticals: Restrictions in Use and Availability. Essential Drugs and Medicines Policy. Quality Assurance and Safety: Medicines. *Health Technology and Pharmaceuticals*, April 2003; 22-23.
4. Kava and Liver Toxicity: Frequently Asked Questions. *Health Canada Online*. Available at [www.hc-sc.gc.ca/english/protection/warnings/2002/2002](http://www.hc-sc.gc.ca/english/protection/warnings/2002/2002). Accessed August 2002.
5. Pharmaceuticals: Restrictions in Use and Availability. Essential Drugs and Medicines Policy. Quality Assurance and Safety: Medicines. *Health Technology and Pharmaceuticals*, World Health Organization, April 2003; 22-23.
6. Worth, The Honorable Trish. TGA Recalls Over the Counter Medicines Containing Kava. Announcement to the Minister for Health and Ageing. Australia; 15th August 2002.
7. Information for Sponsors: Safety of Kava-containing Medicines. Available at: [www.health.gov.au/tga/docs/html/kavaspon.htm](http://www.health.gov.au/tga/docs/html/kavaspon.htm). Accessed August 2002.
8. Kava Seized. *Northern Territory News* (Australia), December 11, 2003; 2.
9. South Africa is latest country to purge itself of kava products. *Nutraceuticals International*, October 2003; 8(10).
10. Kava-Containing Dietary Supplements May Be Associated with Severe Liver Injury. Consumer Advisory. *Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration*, March 25, 2002.
11. Hepatic Toxicity Possibly Associated with Kava-Containing Products — United States, Germany, and Switzerland, 1999-2002. *MMWR Weekly*, CDC, November 28, 2002; 51(47): 1065-1067.
12. Kava Product Warning Label Issued by Leading Herbal Association. *American Herbal Products Association. Press Room*. March 27, 2002.
13. Ibid.
14. DeAngelis, Catherine D., MD, MPH. Fonanarosa, Phil B., MD. Drug Alias Dietary Supplements. *JAMA*, September 17, 2003; 290(11): 1519-1520.
15. Marcus, Donald M., MD. Botanical Medicines — The Need for New Regulations. Sounding Board. *The New England Journal of Medicine*, December 19, 2002; 347: 2073-2076.
16. The Kava Executive Committee: an international committee has been formed in an effort to lift the ban on this popular herb. *Nutraceuticals World*, 6(11): 28.
17. Production drops due to worldwide health concerns. *Hawaii Agricultural Statistics Service*. Available at [www.nass.usda.gov/hi/speccrop.kava.htm](http://www.nass.usda.gov/hi/speccrop.kava.htm). Accessed July 2003.
18. Gruenwald J. Kava Stakeholders Plan Regulatory Review and Market Return. *American Botanical Council. Herbal Gram*, 2004; 61: 69-70.
19. Ibid.
20. Pacific Delegation to Visit Brussels in April to Lobby for the Lifting of Kava Ban. *Global News Wire*, Pac News, January 20, 2004.
21. Hawaiian Kava Forum. Available at <http://kavaforum.org>. Accessed in 2004.
22. Werneke U, Earl J, Seydel C, Horn O, Crichton P, Fannon D. Potential health risks of complementary alternative medicines in cancer patients. *British Journal of Cancer*, January 26, 2004; 90(2): 408-13.
23. Estes JD, Stolpman D, Olyaei A, Corless CL, Ham JM, Schwartz JM, Orloff SL. High Prevalence of Potentially Hepatotoxic Herbal Supplement Use in Patients with Fulminant Hepatic Failure. *Archives of Surgery*. August 2003; 138(8): 852-858.
24. Singh YN, Devkota AK. Aqueous kava extracts do not affect liver function tests in rats. *Planta Med*. 2003 Jun; 69(6): 496-9.
25. Russmann S, Barguil Y, Cabalion P, Kritsanida M, Duhet D, Lauterburg BH. Hepatic Injury due to traditional aqueous extracts of kava root in New Caledonia. *Eur J. Gastroenterol Hepatol*, 2003 Sep; 15(9): 1033-6.
26. Tavana G, Stewart P, Ragone D, Fredrickson K, Cox PA, Borel J. Lack of Evidence of Kava-Related Hepatotoxicity in Native Populations in Savaii, Samoa. *Herbal Gram*, 2003; 59:28-32.
27. Nerurkar PV, Dragull K, Tang CS. In Vitro Toxicity of Kava Alkaloid, Piermethystine, in HepG2 Cells as Compared to Kavalactones. *Toxicol Sci.*, 2004 Jan 21. [Epub ahead of print] PMID: 14737001
28. Tabrah FL, Eveleth BM. Evaluation of the Effectiveness of Ancient Hawaiian Medicine. *Hawaii Medical Journal*, January-February 1966; 25(3): 223-230.
29. Brown MF. *Who Owns Native Culture?* Harvard University Press, Cambridge, Massachusetts, 2003; 100.
30. Ibid., P. 133.
31. Ibid., P. 133.
32. Ibid., P. 140.
33. Auwae H. Interview conducted by the authors, February 3, 1999.