

The Kura Files: Qualitative Social Survey

Madhukar Pande*
Mani Naiker*****
Graham Mills**
Narendra Singh***
Tevita Voro****

*Research Fellow, Royal New Zealand College of General Practitioners, 88 The Terrace, Wellington, New Zealand.
 Walden University, gmills@waldenu.edu. * Communicable Disease Surveillance Specialist, Secretariat of the Pacific Community, Noumea, New Caledonia, narendras@spc.int. ****University of the South Pacific. *****School of Biological, Chemical and Environmental Sciences, Faculty of Science and Technology, The University of the South Pacific, PO Box 1168, Suva, Fiji, corresponding author: naiker_m@usp.ac.fj.

Abstract

The widespread use of Kura/Noni came to the attention of researchers from both the University of the South Pacific and the Fiji School of Medicine. Amongst other associated research undertakings to better understand the use and potential benefits of this herbal medicine, a nationwide qualitative research was undertaken from September 2002 - February 2004. Interviews, participant observation and participatory activities involved over 400 respondents. These research activities showed Kura is thought to be beneficial for a large number of ailments that ranged from skin conditions to high blood pressure. In total Kura has been reported to be useful for 66 medical conditions and 1 spiritual application. Based on the findings of the Research Team, it is concluded that there is sufficient grounds to proceed further with the next two phases of this research project: biochemical analysis to identify the active ingredients in the different parts of the plant, and later clinical trials to determine opportunities for developing pharmaceutical drugs. (PHD, 2005 Vol 12 No 2 Pages 85 - 93)

Introduction

The herbal medicine under research came to the attention of team members in 2001. Called variously Kura or Archi (Fiji), Noni (Hawai'i), Nono (Tahiti), Koonjerong, Takoonja, Great Morinda, Smelly Cheese Fruit (Australia), Mengkudu (Malaysia), Nhua (Southeast Asia), Nonu (Tonga and Samoa) it is classified as *Morinda Citrifolia* of the Rubiaceae family (Whistler, 1992; 1996). It is known to be found on most tropical regions of the



Figure 1. A typical branching end of a Kura plant bearing broad leaves, flowers and fruits

world, such as the South Pacific and South East Asia. The trees can exceed one hundred years of age, can have a trunk of about 100mm diameter and have a white flower mainly in autumn and summer, which ripens into a succulent fruit, which falls to the ground.

Although in most people's opinions the ripe fruit and its juice have a disgusting smell and taste, it is never the less used in the above regions as a traditional herbal medicine, and as a general elixir, poultice and in many other ways is believed to have beneficial health properties. More recently, the fruit juice has become a major export for the South Pacific region to Europe and North America, and a significant agricultural, preparation, packaging, and marketing industry has been developed. In addition to the fruit juice, secondary products such as soaps, shampoos, skin creams, herbal tea and a tablet form of Noni are being successfully manufactured and marketed.

From the perspective of biochemists, pharmacologists, medical practitioners and public health workers, the major problems faced is that we know very little about Kura's active ingredients and its appropriate application and usage as a pharmaceutical agent. Although, research into Noni is in progress at many universities and research centres, and a significant bibliography of research publications is currently mounting, commercial enterprises concerned with Noni now have impressive web sites merchandising their products (<http://www.bula-noni.com.au/>).

It should be noted from the beginning that the aim of this research is to determine the uses and preparations of Kura for further scientific experiments involving chemical analysis to identify the active ingredients in the plant and possibly clinical trials in the near future. This research should not be seen to legitimize the use of Kura or any commercially manufactured Kura products for any of the conditions as stated by the respondents. The findings of this report should not be used to promote current commercial ventures because the Research Team is yet to determine the scientific evidence pertaining to respondents' claims.

Research Methodology

Since the survey was qualitative in nature, the respondents surveyed are not to be treated as a representative 'sample' of a larger population, but rather as an 'example' of Kura users in Fiji. As such, it has not been the intention of the population surveyed to be used comparatively with other segments of Fiji's population, although because the survey population was so large for a qualitative research obviously certain analogies can be drawn. Similarly, it has not been the intention of the research for comparisons within the survey population to be made, say between respondents in the East compared to respondents in the West of Fiji, or between age, gender, income, ethnic or education groupings, but again useful analogies may be made. Where data related to the characteristics of the population have been made below, this has been done to create a population reference frame so the reader will understand more fully exactly who participated in the research.

Methodological Strategy

As a qualitative social research exercise, the well-known and tested strategies of purposive interviews and participant observation were employed. Basically, research assistants were required to randomly search out and network with Kura users, spend time with them, gain their confidence, interview them and to certain extents depending upon the circumstances of individual circumstances, spend some time living with and experiencing the lives of respondents in order to learn about the part played in their lives by Kura and how it was sourced, prepared and used, and the beneficial effects Kura users attributed to it.

In order to achieve some degree of uniformity of practice and reporting between individual research assistants and supervisors a 'one day' Qualitative Research Training Workshop was held. Participants were introduced to the extent of previous and ongoing research into Kura,

the theoretical basis of qualitative research and trained in interview techniques. Immediately following the Workshop, research teams were dispatched to the field, which included urban and rural areas of the Southern and Central, Eastern, Western and Northern Provinces, with instruction to randomly seek out and secure the cooperation of not less than twenty Kura users each. The Research Team hence managed to gather a total of 408 appropriately filled-in questionnaires. This was achieved in a variety of ways. In some cases, village chiefs were formally approached with a sevusevu as a traditional means (using kava) to seek permission to engage villagers in the research project, and asked for their cooperation in identifying Kura users. In other cases, traditional herbalists were invited to identify users, and in still other cases research assistants networked through family and friends. We encountered no cases of refusal to cooperate with the research enterprise. On the contrary, as we have learned from previous research exercises of this nature, the level of cooperation could be described as enthusiastic. However, it should also be noted that some participants were reluctant to provide personal details but readily participated in the research in regards to providing information about their experiences with Kura.

This population consisted of 174 males and 232 females with 2 unspecified. Although respondents were not specifically asked their exact ages

Data was analyzed using the 'thematic approach' in qualitative research. Each respondent's questionnaire was coded with a numerical number, and his or her responses entered into an Excel and Word database. The database includes information on demographics of the respondents, the ailments for which Kura was used, its frequency of use, the part(s) of the plant that was used, the different Kura preparations, and other interesting comments pertaining to individual experiences with this herbal plant. The main aim of this type of analysis was to determine what Kura is used for, what part of the plant is used, and how the identified part of the plant is prepared for use.

Characteristics of the Population

In total 408 individuals were interviewed which constitutes a relatively large qualitative research population. This population consisted of 174 males and 232 females with 2 unspecified. Although respondents were not specifically asked their exact ages, they were asked to declare themselves into one of three age range categories that included the age of under 25, between 25-45 and over 45 age group. The research assistants were specifically instructed not to interview children, who are defined in international law as all persons below the age of 18. Having said that many interviewees with children did mention giving Kura to their children when faced with different illnesses. There were 36

respondents under the age of 25; 162 respondents in the 25-45 age range, and 190 in the 45+ age range, with 20 respondents not specifying their age.

Given the age distribution of the respondents, it was the opinion of the Research Team that older people more commonly used Kura because they seem to still have the required knowledge as handed down by their ancestors. Anecdotal evidence shows that this knowledge is slowly being acquired by the younger generation.

Indigenous Fijians made up the largest ethnic group (308; 75%) in this research, with Indo-Fijians having 85 (21%) respondents, Europeans having 7 respondents, 5 who identified their ethnicity as 'others' (not including any of the above, and not including Chinese), and 3 respondents did not mention their ethnicity. The 'others' group include Pacificans*. It is the opinion of the Research Team that the distribution of respondents is very much reflective of who uses Kura in Fiji. Having said that, the use of Kura among the Chinese population in Fiji could not be ascertained in this research, even though there has been observation of them purchasing Kura for use. Language was cited as a potential barrier for our research assistants when asked if they had approached the Chinese population in Fiji.

Of all the respondents, 276 (68%) were rural based, 131 (32%) urban based, and 1 unspecified. The larger composition of the respondents being rural based were hardly surprising since it is common for these dwellers to rely on trusted traditional medicine considering they do not have easy access to health centres, hospitals and pharmacies. Also most of the users who were from the rural setting commented that they did not have to pay for Kura products because the plants were growing wild, and easily available. However this trend is changing with more urban people using Kura products because they are becoming more readily available in fresh-produce markets and supermarkets.

In respect to the regularity of Kura use, research assistants were asked to ascertain if the respondents were regular or irregular users. Definitionally, this involved a grey area, and what exactly constituted 'regular' or 'irregular' was extensively discussed. One method used to determine this was by looking at the number of years a respondent used Kura. Regular users were classified as those that have used Kura daily for more than a year. Based on this, it was reported that

274 (67%) respondents were regular users, 125 (31%) were irregular users, with 9 unspecified. Some of the regular users of Kura (109; 27%) have been using Kura for anywhere between 2-10 years. Some respondents also mentioned that they have been using Kura for a long period of time but only during sickness.

In the opinion of the Research Team, it is the use of Kura and its effect that is more important at the moment, rather than its frequency, even though further analysis will show that people who have really benefited from Kura have continued to use it even after getting better from a single use.

It is also important to note that certain conditions such as diabetes, high blood pressure, some joint and muscle pain are permanent/recurring hence the users have seen a need to continue using Kura for the improvement it brings.

It is of interest to note that almost a third of these reports (415) were concerned with just 5 conditions: joint pains and swellings (100), muscle pains (59), headache (64), backache (68), blood pressure (70), and body strength (54)

Research Findings and Discussion

This section of the report will present the research findings and discuss these findings for the following:

- What illnesses/diseases/conditions is Kura used for?
- What part of the plant is preferred with respect to the various conditions?
- How is the identified 'part of the plant' prepared for use?
- What was the outcome of using Kura for the specified condition?

As part of the questionnaire, respondents were asked if they had a medical history or had they seen a doctor for the illness/disease/condition that they suffered from. Just over half (58%) had a medical history or had seen a doctor for their illness/disease/condition. It is important to note that most of respondents who had a medical history said that their conditions improved after taking Kura. Some even went back to their doctors to tell them that they preferred Kura to the medication given at the hospitals and health centres.

In order to clarify the specific health condition for which Kura was believed to be beneficial, the researchers developed a tally of 52 conditions plus a 53rd open column for any condition not specified in the questionnaire. This tally was not designed to be used as a questionnaire checklist, but rather an interview prompt and method of information categorization. The research found that respondents found Kura to be beneficial in 67 conditions, with an exception where it was used to 'ward-off' evil spirits (R64). Altogether there were 1293

* Pacifican is a person originating from one of the Pacific Islands.

Muscular System (M)

Condition	No. of responses	As a % of total M. System reports	As a % of total number of reports
Joint pain and swelling	100	28	7.7
Backache	68	19	5.2
Headache	64	18	4.9
Muscle pain	59	17	4.5
Arthritis	39	11	3
Sprain	22	6	1.7
Stroke	1	1*	-
TOTAL	353	100	27

* Rounded off to total 100%

reports of Kura having a beneficial effect on a specific ailment or health condition from the 408 respondents, averaging approximately 3 ailments per respondent. It is of interest to note that almost a third of these reports (415) were concerned with just 5 conditions: joint pains and swellings (100), muscle pains (59), headache (64), backache (68), blood pressure (70), and body strength (54).

Furthermore, certain conditions/illness have been grouped together because respondents did not differentiate among them when commenting; for example, most skin conditions were grouped together as 'skin disease' because similar preparations were used for them.

The following section will look at the conditions/illnesses; part of the plant used; preparation techniques; benefits; and any other useful comments. Respondents will present this in terms of 'frequency of claims'. The sections have been divided according to the human body and it's various systems: Muscular; Integumentary; Digestive; Respiratory; and others.

Part of plant used and its preparation:

Backache

1. Ripe fruit is fermented by placing in a plastic container or hung in a plastic bag for the juice to slowly drip into a container. This juice is drunk.
2. Fruit (ripe or green) boiled with some water, filtered in cloth, and the juice is drunk.
3. Leaves are heated and bandaged to back.
4. Crushed leaves are applied to back.
5. Leaves mixed in oil and used for massaging.
6. Seeds dried in the sun, mixed with coconut oil and used for massaging.
7. Bark of tree is pounded to extract juice for drinking.
8. Bark of tree is dried in sun, mixed with coconut oil, and is used for massaging.
9. Roots dried and chopped are mixed with coconut oil to be used for massaging.

Headache

1. Ripe fruit is fermented by placing in a plastic container or hung in a plastic bag for the juice to slowly drip into a container. This juice is drunk.
2. Fruit (ripe or green) boiled with some water, filtered in cloth, and the juice is drunk.
3. Fruit juice is applied on head and massaged.
4. Leaf juice (fresh or boiled) is extracted and drunk.
5. Roots are pounded and its juice drunk.
6. Leaves are mixed in oil and used for massaging.
7. Roots are mixed with oil and used for massaging.

Joint Pain/Swelling/Arthritis/Sprains

1. Leaves heated (with coconut oil), and bandaged to affected area.
2. Ripe fruit is fermented, and the juice is drunk.
3. Leaves are boiled in water and the juice drunk.
4. Fruit is boiled in water and the juice drunk.
5. Roots and bark scraped, cooked in water, and strained for the juice. This juice is applied to affected area and bandaged (change bandage every 4 days).
6. Raw roots is mixed with coconut oil, and used for massaging.
7. Ripe fruit is eaten.
8. Seeds dried in sun is mixed with coconut oil and used for massaging.
9. Bark is mixed in coconut oil and used for massaging.
10. Leaves are cut and boiled in water to be used for a steam bath treatment.
11. Leaves are finely chopped, mixed in coconut oil and used for massaging.

Muscle Pain

1. Bark is mixed with coconut oil and used for massaging.
2. Leaves are heated and bandaged to affected areas.
3. Roots are pounded for juice that is boiled in water and later drunk.
4. Fruit juice is drunk.
5. Roots are mixed with coconut oil and used for massaging.

Integumentary System (I)

Condition	No. of responses	As a % of total I. System reports	As a % of total number of reports
Itchiness	47	13	3.6
Boils/Abscesses	42	12	3.2
Soft Tissue Trauma/Pain and Swelling	32	9	2.5
Fresh Cuts	30	8.5	2.3
Dry Skin	27	8	2
Dhani (fungal infection)	26	7.4	2
Open sores	26	7.3	2
Pimples	26	7.3	2
Kanikani (kava skin)	21	6	1.6
Ringworm	18	5	1.4
Rashes	18	5	1.4
Skin Colouration	13	4	1
Hair Root Boils	12	3	0.9
Enhance Physical Beauty	11	3	0.8
Burns	4	1	0.3
Gangrene	2	0.5	0.15
TOTAL	355	100	27*

*Rounded off to closest %

Stroke

1. Fruit juice is drunk.
2. Leaves are mixed with coconut oil and used for massaging.

Part of Plant used and its Preparations¹:**Soft Tissue Trauma/Pain and Swelling**

1. Ripe fruit juice is extracted and drunk.
2. Leaves are heated and applied to affected areas.
3. Seeds are dried in sun, then mixed with coconut oil and applied to affected areas.

Fresh Cuts/Wounds

1. Leaves are crushed and its juice poured over the cut/wound (bandage with heated leaves if required)
2. Roots and onion is pound together to form a paste. Apply paste to cut/wound and bandage with leaves.
3. Use Kura soap.
4. Bark is crushed and applied to cut/wound.
5. Roots are mixed in coconut oil and applied to cut/wound.
6. Leaves are ground, then mixed in coconut oil and applied to cut/wound.
7. Fruit is boiled in water and the juice is drunk.

Skin Coloration/Pimples/Dhani (fungal infection)/ Dry Skin/Itchiness/Rashes/ Kanikani (Kava skin)/ Hair Root Boils/Open Sores.

1. Use Kura soap (pimples, dhani, dry skin, itchiness, rashes, open sores, hair root boils)
2. Use Kura cream available from some herbalist (itchiness, dhani, open sores, dry skin, rashes,

¹ Note: For the purpose of easier reporting these conditions (skin colouration, itchiness, dhani, ringworm, dry skin, kanikani, rashes, hair root boils, and pimples) will be discussed as one because they have almost the same remedies. Clear distinctions will be made where a particular treatment is recommended for only a particular condition.

kanikani, pimples, skin colouration). The ingredients are kept as a trade secret.

3. Leaves are mixed in coconut oil and applied to affected areas (itchiness, kanikani, pimples, dhani, ringworm, rashes, dry skin).
4. Fruit juice is drunk (all skin conditions).
5. Bark is mixed in coconut oil and applied to affected areas (kanikani, itchiness).
6. Bark and roots are crushed together to extract the juice. The juice is applied to hair (hair root boils, open sores).
7. Bark juice extracted for drinking and rubbing on skin (itchiness, ringworm)
8. Seeds dried in sun, mixed with coconut oil and applied to affected areas (dhani, itchiness, ringworm).
9. Ripe fruit dried in sun, mixed with coconut oil and applied to affected areas (dhani, itchiness, ringworm).
10. Raw roots mixed in coconut oil and used for skin infections.
11. Leaves are heated and applied to affected areas (open sores)
12. Leaves crushed and juice extracted to be applied on affected areas (open sores).

Enhance Physical Beauty

1. Leaves cut into small pieces, dried in sun, mixed with coconut oil and applied to body.
2. Seeds dried in sun, mixed with coconut oil and applied to body.
3. Ripe fruit dried in sun, mixed with coconut oil and applied to body.
4. Fruit juice is drunk.
5. Kura soap is used.

Boils/Abscesses

1. Young leaves and small fruits are applied to affected areas.

Digestive System (D)

Condition	No. of responses	As a % of total D. System reports	As a % of total number of reports
Stomach Ache	37	19	2.86
Upset Stomach	33	17	2.55
Sore Throat	27	14	2.08
Heart Burn	17	8.7	1.32
Alleviate loss of appetite	16	8.1	1.24
Digestion Problems	15	7.7	1.16
Obesity	14	7	1.08
Diarrhoea	12	6	0.93
Gastric Ulcers	12	6	0.93
Oral Problems	8	4	0.62
Fish Poisoning	2	1	0.15
Vomiting	2	1	0.15
Nausea	1	0.5	0.08
TOTAL	196	100	15*

*Rounded off to closest %

- Leaves are chopped and boiled in coconut oil, and applied to affected areas.
- Ripe fruit is fermented and the juice is drunk.
- Leaves are heated and applied to affected areas.
- Roots and fruits are mixed and applied to affected areas.
- Roots mixed in coconut oil are applied to affected areas.

Gangrene

- Roots are squashed and applied to affected areas.
- Ripe fruit is cooked, mixed with orange juice and the juice is drunk.

Burns

- Seeds dried in the sun, mixed with coconut oil and applied to affected areas.
- Roots crushed and the juice applied to affected areas.
- Bark crushed and the juice is applied to affected areas.

Part of Plant used and its Preparations**Loss of Appetite**

- Ripe fruit is fermented and drunk.
- Ripe fruit is cooked (mixed with orange juice) and juice is drunk.

Stomach Ache/Upset Stomach/Gastric Ulcers/ Digestion Problems/Constipation

- Fruit is boiled with water then boiled fruit is placed in cloth and squeezed to extract juice for drinking.
- Fresh fruit juice is drunk.
- Leaves are squeezed for juice, little lemon added and drunk.
- Flower preparation is drunk. The preparation technique and other ingredients used are kept as a trade secret.
- Bark is boiled, the juice extracted and drunk (constipation).
- Ripe fruit is fermented and the juice is drunk.
- Ripe fruit is eaten.

Nausea/Vomiting

- Ripe fruit is cooked/boiled and the juice drunk.
- Leaves squeezed to extract juice then mixed with water and drunk.

Diarrhoea

- Ripe fruit is fermented and the juice is drunk.
- Leaves are squeezed to extract juice for drinking.
- Fruit is boiled then juice is extracted for drinking.
- Roots are pound to extract juice, mixed with water and drunk.

Fish Poisoning

- Roots are pound, the juice extracted and drunk.
- Bark is pound, the juice extracted and drunk.

Obesity

- Ripe fruit juice drunk daily.
- Fresh fruit juice drunk 3 times a day.

Heart Burn

- Ripe fruit is fermented and the juice is drunk.
- Ripe fruit is boiled, the juice extracted and drunk.
- Ripe fruit is eaten.
- Leaves juice extracted and drunk.

Sore Throat

- Fruit is scraped, juice extracted and drunk.
- Ripe fruit is fermented and the juice is drunk.
- Bark and fruit is mixed, the juice extracted and drunk.
- Ripe fruit is boiled and the juice is drunk.

Oral Problems

- Young fruit is grated/pound and the juice is applied to mouth.
- Young fruit is grated/pound and the juice is drunk.

Part of Plant used and its Preparations**Cough**

- Roots boiled with the fruit and garlic and drunk.
- Bark mixed with water is drunk.
- Fruit is boiled and the juice is drunk.
- Fresh fruit juice is drunk.

Respiratory System (R)

Condition	No. of responses	As a % of total R. System reports	As a % of total number of reports
Cough	41	53.9	3.171
Asthma	22	28.9	1.702
Bronchitis	4	5.3	0.309
Pneumonia	4	5.3	0.309
Tuberculosis	4	5.3	0.309
Sinus	1	1.3	0.077
TOTAL	76	100	6*

*Rounded off to closest %

Bronchitis

1. Young fruit is pound, mixed with water and the juice is drunk.

Asthma

1. Bark is pound, mixed with water and drunk.
2. Fruit is boiled (with leaves) and the juice is drunk.
3. Fresh fruit juice is drunk.
4. Young fruit is pound, mixed with water and drunk.

Pneumonia

1. Young fruit is pound and the juice is drunk.
2. Kura oil is applied. (The part of plant and its application is unspecified).

Tuberculosis

1. Fruit is boiled and the juice is drunk.
2. Root juice is extracted and drunk. (1-2 glasses a day)
3. Kura oil is applied. (The part of plant and its application is unspecified).

Sinus

1. Fruit juice is drunk.

Part of Plant used and its Preparations**High Blood Pressure**

1. Roots boiled with fruit and garlic and the juice is drunk.
2. Fermented fruit juice drunk to reduce HBP during pregnancy.
3. Boil fruit with red (ripe) coconut husk and simmer for a while, then add crushed garlic to it. Juice is extracted and drunk.
4. Fruits boiled with ginger and the juice is drunk. Should be consumed daily.
5. Bark juice extracted and drunk.
6. Ripe fruit is fermented and the juice drunk.

Diabetes I & II

1. Ripe fruit juice extracted and drunk (can be mixed with orange juice to make it more drinkable).
2. Roots, bark and fruit crushed together and boiled. The juice is extracted and drunk.
3. Fruit boiled and the juice drunk.
4. Ripe fruit eaten.

Enhanced Body Strength

1. Ripe fruit fermented, the juice is extracted and drunk like a tonic.
2. Leaves, roots and fruit are boiled together and the juice is drunk like a tonic.

Fever

1. Leaves are warmed and then used to cover body; helps decrease body temperature.
2. Ripe fruit is fermented and the juice is drunk.

Stress Relief and Depression

1. Ripe fruit boiled and the juice is drunk (depression).
2. Leaves are mixed with coconut oil and used for massaging.
3. Leaves are warmed and applied to affected areas.
4. Root juice is extracted and drunk.

Improved Sexual Performance

1. Fruit juice is extracted and drunk daily.
2. Seeds dried in the sun then mixed in coconut oil and used for massaging body.
3. Leaves are crushed, the juice extracted and drunk.
4. Roots are crushed, the juice extracted and drunk.

Ease Pregnancy and Delivery

1. Bark and fruits crushed together and juice drunk.
2. Leaves crushed, mixed in cold water and drunk.
3. Fruit boiled and the juice drunk.
4. Leaves (instead of antiseptic) are place in hot water for a steam bath (after delivery).

General Well-Being

1. Ripe fruit is fermented and the juice is drunk.

Sore Eyes

1. Flowers are rotated around the eyes and then cracked near the eyes.
2. Fresh water dripping from leaves is applied to eyes.
3. Leaves are rotated around the eyes and then snapped near the eyes.
4. Leaves are ground and the juice applied.
5. Leaves are heated and crushed before applying to eyes.
6. Fruit juice is drunk.

Other Major Conditions (O)

Condition	No. of responses	As a % of total O. System reports	As a % of total number of reports
High Blood Pressure (HBP)	70	25	5.41
Diabetes I & II	66	23.6	5.10
Body Strength	54	19.3	4.18
Stress Relief & Depression	22	7.9	1.70
Fever	18	6.4	1.39
Improve Sexual Performance	15	5.4	1.16
General Well-being	13	4.6	1.01
Ease Pregnancy and Delivery	11	3.9	0.85
Sore Eyes	11	3.9	0.85
TOTAL	280	100	22*

*Rounded off to closest %

Most preferred part of the Kura plant

Kura fruits are the preferred part of the plant (51% of respondents mentioned this) when using Kura. The fruit can be used when it is young and green or when it is ripe and rotting. A majority of the users (20% of all types of Kura preparations) prefer to drink boiled Kura fruit juice; closely followed by fermented juice from ripe fruits (14%), pre-prepared juice from market or herbalist (14%), and fresh Kura fruit juice (10%).

The use of Kura leaf is also very prominent. Of all respondents, 32% said that they used the warmed/heated leaf (11% of all types of Kura preparations) either for reducing swelling of joints and muscle tissue, or fresh leaf juice (12%) for any other ailments/conditions mentioned above. Together, Kura fruit and leaves preparations account for over 80% of Kura preparations.

The roots and bark of Kura are also important (8 % and 7 % respectively of all respondents). The roots and stem are seen to have strong properties that are useful for making juices for very specific conditions such as high blood pressure and diabetes. Roots and bark are also readily used to make different massaging oils used for various aches and pains. The root is said to be the most potent part of the plant, practically useful for almost all conditions listed above.

Kura fruit seeds and flowers also feature for some conditions. Fruit seeds were often used to make oils to be used for massaging. Kura flowers were mentioned for use in healing sore eyes. Flowers were also seen as being quite potent, however, there are not many preparations involving flowers because the fruit that eventuates from these flowers is seen as more important. Thus the use of flowers is often restricted by its availability and knowledge of how to use it.

Kura soap and cream (13 % of all Kura preparations) also featured. Many urban users preferred purchasing these from supermarkets and pharmacies instead of other types of preparations because it is cheap,

readily available, and generally seen as quite effective. However, the ingredients used in these preparations are not known, but the slightly rough texture of the soap would indicate that some seeds, bark or roots might be present.

Since respondents have mentioned many times that every part of the Kura plant is useful, hence many different types of preparations are possible as seen above for various conditions. It would thus be the aim of the next phase to analyse as much of the plant as possible to identify the active ingredients.

Side Effects of Using Kura

A total of 36 (9%) respondents mentioned experiencing some form of side effects from using Kura products. Most of these side effects were only temporary as the respondents and traditional healers mentioned that it was part of the healing process to feel certain side effects.

Some of these side effects include:

- Vomiting when Kura juice first drunk.
- Itchiness when Kura soap used.
- Gingivitis.
- Allergic reaction with Kura soap.
- Weakness of body.
- Skin peeling when Kura soap used.
- Rise in blood sugar level.
- Itchiness when leaves applied to body.
- Weight loss during pregnancy.
- Sudden onset of sickness.
- Oral thrush.
- Upset stomach.

None of the respondents saw the side effects as life threatening. As mentioned earlier, many of the side effects were seen as a 'sign' that the body was healing/cleansing itself of the underlying diseases. Despite experiencing side effects, most of the respondents continued to use Kura.

Kura fruit and its juice have also been mentioned for use in removing of evil spirits, and after the funeral ceremony

of high chiefs of a particular area. Drinking the fruit juice was seen to ward-off evil spirits. How this must work is still an enigma. Some key respondents also mentioned that after the burial ceremony of a high chief or/and his/her family, the people involved in the actual burial of the body ate Kura fruits, holding the fruit behind their backs after every bite until finished. They stand with their backs turned towards each other (standing in a circular formation), thus each person not seeing the other eat the fruit. The significance of such a practice is unknown, but this is only confined to the Eastern part of Viti Levu (main island of Fiji) to our understanding.

Conclusions

The purpose of this research was to determine the consumers, uses and preparation of Kura in Fiji. This social survey is seen as the first phase of a three-phase study, which would eventually lead to clinical trials for specific pharmaceutical medicines. The second phase of this research plans to identify the active ingredients present in the different parts of the Kura plant- from the roots right up to the flowers. The data contained in this research should not be seen to legitimize the use of Kura for any specific health condition; rather it should be seen only as a record of how and why Kura is used.

There can be little doubt that Kura is a widely used and trusted herbal medicine in Fiji society. However, its concentrations, dosages and regularity of use vary widely. Further, Kura is often used with both prescribed and other herbal medicines. However, whether or not users have been able to correctly diagnose their ailment is altogether another unknown factor. Having said that, users would probably know if they have joint pains or muscles pains. With ailments such as diabetes, a much more complicated combination of circumstances needs to be taken into account. If we take into consideration the first 20 major uses, this should indicate for the forthcoming chemical analysis and clinical trials, what ailments/conditions Kura is potentially beneficial for. If there are significant medicinal properties in Kura,

then the next two phases of this research will explore these and report the findings for further research and development.

Bibliography

- Babbie, E. (1992). *The Practice of Social Research*. Wadsworth Publishing Company. California.
- Becker, H. (1963). *Becoming a Marihuana User in The Outsiders*. Freedom Press.
- Mills, G. (1986). *Sniffing with Top Spunks: Notes on the Sociopharmacology of Solvent Inhalation*. *Welfare in Australia*, Vol.6 No.1.
- Salman, L. (1992). *Beneficiary Assessment*. World Bank. New York.
- Whistler, A. (1992). *Tongan Herbal Medicines*. University of Hawaii Press.
- Whistler, A. (1996). *Samoan Herbal Medicine*. O le Siosiomaga Society Inc.

Who thinks of death does nothing worthy of life
(Bloomsbury Dictionary of Proverbs - 1994)