

BREADFRUIT DIVERSITY IN FIJI

OUTLINE

- INTRODUCTION
- REVIEW
- METHODOLOGY
- RESULTS AND DISCUSSION
- CONCLUSION AND RECOMMENDATION

INTRODUCTION

Importance of Breadfruit

1. Source of staple diet – food and nutrition security.
2. Traditional significance.
3. Highly adaptable
4. Resilient crop – post cyclone recovery.
5. Wide genetic diversity – Koroiveibau 1966 (collaborative work –MOA,PBP, USP, SPC)

This is an undisputable fact which is evident especially for the people of Natewa in the Northern part of Fiji, who consumed breadfruit all year round due the wide genetic diversity of the crop.

Fiji Islands



LITERATURE REVIEW

- The first breadfruit published report was in 1966, by Koroiveibau - work funded by SPC.
 - Characterisation of 70 varieties in Fiji.
- This work enables us to understand the gift of nature based on diversity .
- Collaborative work – MOA ,PBP,USP,SPC

METHODOLOGY

- Characterization work commenced in 2015 on 15 varieties Preliminary Survey of breadfruit varieties were conducted to identify the existing varieties based on traditional knowledge.
- 3 categories based on fruit sizes, seed and non seeded varieties.
- Tagging and monitoring of fruiting pattern to confirm the varieties.
- Breadfruit characterization manual (Ragone 2003) was used to guide characterization work.
- Data variables – leaves and fruit (internal and external) characteristics
- Nutritional analysis conducted by KACL.
- Mapping of fruiting pattern.

RESULTS

FRUIT ANALYSIS	OOQ
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	2080.2
FRUIT CIRCUMFERENCE (cm)	54.2
FRUIT LENGTH (cm)	17.3
FRUIT DIAMETER (cm)	16.25
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	8.7
COLLAR NECK (cm)	4
PEDUNCLE INSERTION (cm)	1.75
LATEX	Light 2 %
WIDTH AT MIDPOINT (cm)	8.75
WIDTH AT SHOULDER (cm)	9
LENGTH OF CORE (cm)	7.25
WIDTH OF CORE (cm)	3
FLESH COLOR	White



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	Brix (%)	Moisture (%)	Total Ash (%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Oqo	12.5	68.7	1.63	0.17	1.06	<0.01	0.01	<0.01	<0.01	<0.01	68.2	5.64

LEAF ANALYSIS	OQO
LOCATION	Natewa Village
LENGTH (cm)	48
WIDTH @ WIDEST POINT (cm)	29.33
LENGTH FROM BASE TO WIDEST POINT (cm)	22.33
LENGTH FROM BASE TO 1ST LOBE (cm)	18.33
# OF LOBES	7
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	V
LEAF MARGIN	17
LEAF COLOR	Dark Green
LEAF SURFACE	Shiny
LEAF FLEXIBILITY	Strong
UPPER ROOT HAIRS	Present on margins 40%
BOTTOM ROOT HAIRS	Present on margins 40%

[illegible]

BREADFRUIT ANALYSIS	LASAWA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round/Oval
FRUIT SKIN TEXTURE	Rough
FRUIT WEIGHT (grams)	1733
FRUIT CIRCUMFERENCE (cm)	47.4
FRUIT LENGTH (cm)	17.3
FRUIT DIAMETER (cm)	15.25
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	8.7
COLLAR NECK (cm)	2.5
PEDUNCLE INSERTION (cm)	1.5
LATEX	Light/Watery Light 5%
WIDTH AT MIDPOINT (cm)	7.5
WIDTH AT SHOULDER (cm)	7
LENGTH OF CORE (cm)	6.75
WIDTH OF CORE (cm)	3.25
FLESH COLOR	White/Whitish Yellow

LASAWA



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LASAWA												

	Brix (%)	Moisture (%)	Total Ash(%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Lasawa	13.4	70.1	1.64	0.16	1.00	<0.01	0.02	<0.01	<0.01	<0.01	47.3	8.86

LEAF ANALYSIS	LASAWA
LOCATION	Natewa Village
LENGTH (cm)	54
WIDTH @ WIDEST POINT (cm)	37.67
LENGTH FROM BASE TO WIDEST POINT (cm)	39.67
LENGTH FROM BASE TO 1ST LOBE (cm)	16.17
# OF LOBES	7
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	
LEAF MARGIN	16
LEAF COLOR	Green
LEAF SURFACE	Pointed
LEAF FLEXIBILITY	Strong
UPPER ROOT HAIRS	Present on the margin 40%
BOTTOM ROOT HAIRS	None

UTO DINA

FRUIT ANALYSIS	UTO DINA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Oval
FRUIT SKIN TEXTURE	Rough skin
FRUIT WEIGHT (grams)	1774
FRUIT CIRCUMFERENCE (cm)	45.5
FRUIT LENGTH (cm)	19
FRUIT DIAMETER (cm)	14.25
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	8
COLLAR NECK (cm)	2.25
PEDUNCLE INSERTION (cm)	1.5
LATEX	Light 8%, Light watery 6%
WIDTH AT MIDPOINT (cm)	7.25
WIDTH AT SHOULDER (cm)	7.75
LENGTH OF CORE (cm)	11.25
WIDTH OF CORE (cm)	3.25
FLESH COLOR	Whitish yellow/Cream white

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LEAF ANALYSIS	UTO DINA
LOCATION	Natewa Village
LENGTH (cm)	55.67
WIDTH @ WIDEST POINT (cm)	41.33
LENGTH FROM BASE TO WIDEST POINT (cm)	26.67
LENGTH FROM BASE TO 1ST LOBE (cm)	19.33
# OF LOBES	8
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	17
LEAF COLOR	Dark Green
LEAF SURFACE	Rough
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	Present
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	VIROASOLA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round/Oval
FRUIT SKIN TEXTURE	Rough,Sand paper like
FRUIT WEIGHT (grams)	1517.4
FRUIT CIRCUMFERENCE (cm)	51.2
FRUIT LENGTH (cm)	18.7
FRUIT DIAMETER (cm)	12
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	7.5
COLLAR NECK (cm)	2.5
PEDUNCLE INSERTION (cm)	1.5
LATEX	Light 9%
WIDTH AT MIDPOINT (cm)	6.25
WIDTH AT SHOULDER (cm)	7.25
LENGTH OF CORE (cm)	8.5
WIDTH OF CORE (cm)	2.75
FLESH COLOR	Whitish yellow



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
VIROASOLA												

	Brix (%)	Moisture (%)	Total Ash(%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Viroasola	23.8	65.0	1.74	0.14	0.87	<0.01	0.01	<0.01	<0.01	<0.01	44.1	7.54

VIROASOLA

LEAF ANALYSIS	VIROASOLA
LOCATION	Natewa Village
LENGTH (cm)	52.67
WIDTH @ WIDEST POINT (cm)	33.67
LENGTH FROM BASE TO WIDEST POINT (cm)	20
LENGTH FROM BASE TO 1ST LOBE (cm)	20.33
# OF LOBES	8
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	20
LEAF COLOR	Dark Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Strong
UPPER ROOT HAIRS	Present
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	KAROKARO
LOCATION	Muana Village, Tunuloa
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Rough,Sharp point skin
FRUIT WEIGHT (grams)	396
FRUIT CIRCUMFERENCE (cm)	30.5
FRUIT LENGTH (cm)	10.25
FRUIT DIAMETER (cm)	9.5
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	7.25
COLLAR NECK (cm)	2.25
PEDUNCLE INSERTION (cm)	1.5
LATEX	none 5 %
WIDTH AT MIDPOINT (cm)	5
WIDTH AT SHOULDER (cm)	6.5
LENGTH OF CORE (cm)	5.5
WIDTH OF CORE (cm)	2.25
FLESH COLOR	Yellowish white

UTO KAROKARO



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
VARIETIES												
UTO KAROKARO												

	Brix (%)	Moisture (%)	Total Ash(%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Uto Karokaro	9.1	75.2	0.70	0.30	1.89	<0.01	0.02	<0.01	<0.01	<0.01	56.9	12.8

LEAF ANALYSIS	KAROKARO
LOCATION	Muana Village, Tunuloa
LENGTH (cm)	34.33
WIDTH @ WIDEST POINT (cm)	22
LENGTH FROM BASE TO WIDEST POINT (cm)	15.7
LENGTH FROM BASE TO 1ST LOBE (cm)	13.33
# OF LOBES	7
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Yellow
SHAPE OF APEX	Pointed
LEAF MARGIN	20
LEAF COLOR	Dark Green
LEAF SURFACE	Light
LEAF FLEXIBILITY	Medium
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	LIVA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Oval
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	700
FRUIT CIRCUMFERENCE (cm)	46.6
FRUIT LENGTH (cm)	15.8
FRUIT DIAMETER (cm)	10.5
FRUIT COLOR	Light Yellow
LENGTH OF PEDUNCLE (cm)	7.25
COLLAR NECK (cm)	2.5
PEDUNCLE INSERTION (cm)	1.75
LATEX	Light thin/Light 10%
WIDTH AT MIDPOINT (cm)	5.5
WIDTH AT SHOULDER (cm)	7.25
LENGTH OF CORE (cm)	6.25
WIDTH OF CORE (cm)	3.25
FLESH COLOR	Light Yellow



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LIVA												

	Brix (%)	Moisture (%)	Total Ash(%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Liva	10.0	68.4	1.79	0.18	1.14	<0.01	0.04	<0.01	<0.01	<0.01	71.8	9.04

LEAF ANALYSIS	LIVA
LOCATION	Natewa Village
LENGTH (cm)	48.33
WIDTH @ WIDEST POINT (cm)	31
LENGTH FROM BASE TO WIDEST POINT (cm)	24
LENGTH FROM BASE TO 1ST LOBE (cm)	8
# OF LOBES	8
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Light Yellow
SHAPE OF APEX	
LEAF MARGIN	18
LEAF COLOR	Light Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	20%
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	SAVISAVI
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	672
FRUIT CIRCUMFERENCE (cm)	36.5
FRUIT LENGTH (cm)	12
FRUIT DIAMETER (cm)	11.25
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	4.75
COLLAR NECK (cm)	3.25
PEDUNCLE INSERTION (cm)	1.75
LATEX	Light, 20%-30%
WIDTH AT MIDPOINT (cm)	3
WIDTH AT SHOULDER (cm)	8.25
LENGTH OF CORE (cm)	6.25
WIDTH OF CORE (cm)	3.25
FLESH COLOR	White cream/Light color

SAVISAVI



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SAVISAVI												

LEAF ANALYSIS	SAVISAVI
LOCATION	Natewa Village
LENGTH (cm)	40
WIDTH @ WIDEST POINT (cm)	27.67
LENGTH FROM BASE TO WIDEST POINT (cm)	25
LENGTH FROM BASE TO 1ST LOBE (cm)	13.33
# OF LOBES	10
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Yellow
SHAPE OF APEX	
LEAF MARGIN	14(yellow)
LEAF COLOR	Light Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	BOKASI
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Rough, Sharp pointy
FRUIT WEIGHT (grams)	1223.5
FRUIT CIRCUMFERENCE (cm)	40
FRUIT LENGTH (cm)	14.75
FRUIT DIAMETER (cm)	14
FRUIT COLOR	Light Yellow
LENGTH OF PEDUNCLE (cm)	7.75
COLLAR NECK (cm)	3.25
PEDUNCLE INSERTION (cm)	2.25
LATEX	Milky and sticky gum&thick 50%
WIDTH AT MIDPOINT (cm)	7.25
WIDTH AT SHOULDER (cm)	10
LENGTH OF CORE (cm)	8.75
WIDTH OF CORE (cm)	4.5
FLESH COLOR	Light Yellow/Cream White



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BOKASI												

LEAF ANALYSIS	BOKASI
LOCATION	Natewa Village
LENGTH (cm)	55.67
WIDTH @ WIDEST POINT (cm)	37
LENGTH FROM BASE TO WIDEST POINT (cm)	37
LENGTH FROM BASE TO 1ST LOBE (cm)	17.33
# OF LOBES	8
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	17
LEAF COLOR	Dark Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Strong
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	on the lobe 20%

FRUIT ANALYSIS	UTO VULA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round/Oval
FRUIT SKIN TEXTURE	Rough (light)
FRUIT WEIGHT (grams)	2458
FRUIT CIRCUMFERENCE (cm)	55
FRUIT LENGTH (cm)	19.5
FRUIT DIAMETER (cm)	17
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	8.5
COLLAR NECK (cm)	4
PEDUNCLE INSERTION (cm)	2
LATEX	Light Watery & Slightly Sticky
WIDTH AT MIDPOINT (cm)	8.75
WIDTH AT SHOULDER (cm)	8.25
LENGTH OF CORE (cm)	10.25
WIDTH OF CORE (cm)	3.25
FLESH COLOR	Whitish yellow



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
VARIETIES												
UTO VULA												

UTO VULA

LEAF ANALYSIS	UTO VULA
LOCATION	Natewa Village
LENGTH (cm)	60
WIDTH @ WIDEST POINT (cm)	40.33
LENGTH FROM BASE TO WIDEST POINT (cm)	29.33
LENGTH FROM BASE TO 1ST LOBE (cm)	22.33
# OF LOBES	7
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	17 (yellow)
LEAF COLOR	Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	Present
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	B/DINA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	422
FRUIT CIRCUMFERENCE (cm)	29
FRUIT LENGTH (cm)	10.625
FRUIT DIAMETER (cm)	10.5
FRUIT COLOR	Light Brown
LENGTH OF PEDUNCLE (cm)	4.625
COLLAR NECK (cm)	4.5
PEDUNCLE INSERTION (cm)	
LATEX	none, 0%
WIDTH AT MIDPOINT (cm)	5.5
WIDTH AT SHOULDER (cm)	5
LENGTH OF CORE (cm)	7
WIDTH OF CORE (cm)	3
FLESH COLOR	Light Yellow

BALEKANA DINA



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
VARIETIES												
BALEKANA DINA												

	Brix (%)	Moisture (%)	Total Ash (%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)	Mn (mg/kg)
Balekana Dina	10.4	65.8	1.50	0.18	1.10	<0.01	0.01	<0.01	<0.01	<0.01	69.0	8.28

LEAF ANALYSIS	B/DINA
LOCATION	Natewa Village
LENGTH (cm)	54.67
WIDTH @ WIDEST POINT (cm)	39.33
LENGTH FROM BASE TO WIDEST POINT (cm)	28
LENGTH FROM BASE TO 1ST LOBE (cm)	18.33
# OF LOBES	8
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	18
LEAF COLOR	Dark Green
LEAF SURFACE	Rough
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	Present on leaf margin
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	WELESI
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Oval
FRUIT SKIN TEXTURE	Rough, Sharp pointy
FRUIT WEIGHT (grams)	1831.5
FRUIT CIRCUMFERENCE (cm)	52.5
FRUIT LENGTH (cm)	18
FRUIT DIAMETER (cm)	15.75
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	8.5
COLLAR NECK (cm)	3.5
PEDUNCLE INSERTION (cm)	2.25
LATEX	Light, Watery, Thick, Gum sticky
WIDTH AT MIDPOINT (cm)	8.25
WIDTH AT SHOULDER (cm)	9.75
LENGTH OF CORE (cm)	11.5
WIDTH OF CORE (cm)	5.25
FLESH COLOR	Light/Whitish Yellow



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WELESI												

LEAF ANALYSIS	WELESI
LOCATION	Natewa Village
LENGTH (cm)	54.67
WIDTH @ WIDEST POINT (cm)	37.33
LENGTH FROM BASE TO WIDEST POINT (cm)	33.67
LENGTH FROM BASE TO 1ST LOBE (cm)	22.33
# OF LOBES	9
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	Pointed
LEAF MARGIN	18
LEAF COLOR	Dark Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Soft
UPPER ROOT HAIRS	Margins 40%
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	B/SAMOA
LOCATION	Natewa Village
FRUIT MEASUREMENTS	
FRUIT SHAPE	Oblong
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	758
FRUIT CIRCUMFERENCE (cm)	35.14
FRUIT LENGTH (cm)	13.75
FRUIT DIAMETER (cm)	10.75
FRUIT COLOR	Light Yellow
LENGTH OF PEDUNCLE (cm)	6.25
COLLAR NECK (cm)	4.5
PEDUNCLE INSERTION (cm)	1.75
LATEX	non sticky 10%
WIDTH AT MIDPOINT (cm)	5
WIDTH AT SHOULDER (cm)	5
LENGTH OF CORE (cm)	9
WIDTH OF CORE (cm)	2.75
FLESH COLOR	Light Yellow

BALEKANA NI SAMOA



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BALEKANA NI SAMOA												

Brix (%)	Moisture (%)	Total Ash (%)	N (%)	Protein (%)	Ca (%)	Mg (%)	Na (%)	Cu (mg/kg)	Zn (mg/kg)	Fe (mg/kg)
12.0	66.9	0.21	1.29	<0.01	0.02	<0.01	<0.01	<0.01	38.5	14.4

LEAF ANALYSIS	B/SAMOA
LOCATION	Natewa Village
LENGTH (cm)	45.67
WIDTH @ WIDEST POINT (cm)	23.33
LENGTH FROM BASE TO WIDEST POINT (cm)	13.33
LENGTH FROM BASE TO 1ST LOBE (cm)	13
# OF LOBES	9
LEAF BASE SHAPE	V
COLOR OF LEAF VEINS	Light Green
SHAPE OF APEX	
LEAF MARGIN	19
LEAF COLOR	Dark Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	Present
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	UTO VATU
LOCATION	Sese Village,Saqani
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Rough
FRUIT WEIGHT (grams)	475
FRUIT CIRCUMFERENCE (cm)	46
FRUIT LENGTH (cm)	12.3
FRUIT DIAMETER (cm)	10
FRUIT COLOR	Green
LENGTH OF PEDUNCLE (cm)	6.75
COLLAR NECK (cm)	2.55
PEDUNCLE INSERTION (cm)	1
LATEX	none
WIDTH AT MIDPOINT (cm)	4.4
WIDTH AT SHOULDER (cm)	6.7
LENGTH OF CORE (cm)	4.25
WIDTH OF CORE (cm)	2.75
FLESH COLOR	Light cream/ Cream white



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
UTO VATU												

LEAF ANALYSIS	UTO VATU
LOCATION	Sese Village,Saqani
LENGTH (cm)	41.5
WIDTH @ WIDEST POINT (cm)	31.75
LENGTH FROM BASE TO WIDEST POINT (cm)	20.25
LENGTH FROM BASE TO 1ST LOBE (cm)	10
# OF LOBES	8
LEAF BASE SHAPE	U
COLOR OF LEAF VEINS	Green
SHAPE OF APEX	Pointed
LEAF MARGIN	19
LEAF COLOR	Dark Green
LEAF SURFACE	Rough
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	Yes
BOTTOM ROOT HAIRS	Yes

FRUIT ANALYSIS	VUNIDAWA
LOCATION	Sese ,Saqani
FRUIT MEASUREMENTS	
FRUIT SHAPE	Oval
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	1904.7
FRUIT CIRCUMFERENCE (cm)	50
FRUIT LENGTH (cm)	18.93
FRUIT DIAMETER (cm)	15.2
FRUIT COLOR	Greenish Yellow
LENGTH OF PEDUNCLE (cm)	7.83
COLLAR NECK (cm)	3.5
PEDUNCLE INSERTION (cm)	2.1
LATEX	Watery,Thick,Gum sticky
WIDTH AT MIDPOINT (cm)	8
WIDTH AT SHOULDER (cm)	8.6
LENGTH OF CORE (cm)	10
WIDTH OF CORE (cm)	2.83
FLESH COLOR	Cream



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
VUNIDAWA												

VUNIDAWA

LEAF ANALYSIS	VUNIDAWA
LOCATION	Sese Village,Saqani
LENGTH (cm)	40.5
WIDTH @ WIDEST POINT (cm)	31.5
LENGTH FROM BASE TO WIDEST POINT (cm)	21
LENGTH FROM BASE TO 1ST LOBE (cm)	13.5
# OF LOBES	7
LEAF BASE SHAPE	U
COLOR OF LEAF VEINS	Yellow
SHAPE OF APEX	Pointed
LEAF MARGIN	21
LEAF COLOR	Light Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	Yes
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	None

FRUIT ANALYSIS	SEISEI
LOCATION	Naboutini, Saqani
FRUIT MEASUREMENTS	
FRUIT SHAPE	Round
FRUIT SKIN TEXTURE	Smooth
FRUIT WEIGHT (grams)	1434
FRUIT CIRCUMFERENCE (cm)	45
FRUIT LENGTH (cm)	16
FRUIT DIAMETER (cm)	14.5
FRUIT COLOR	Light Green
LENGTH OF PEDUNCLE (cm)	5.5
COLLAR NECK (cm)	4
PEDUNCLE INSERTION (cm)	2
LATEX	50% White, not thick
WIDTH AT MIDPOINT (cm)	7
WIDTH AT SHOULDER (cm)	9.5
LENGTH OF CORE (cm)	9
WIDTH OF CORE (cm)	4
FLESH COLOR	Yellowish White

SEISEI



MONTH	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SEISEI												

LEAF ANALYSIS	SEISEI
LOCATION	Naboutini, Saqani
LENGTH (cm)	59.67
WIDTH @ WIDEST POINT (cm)	44
LENGTH FROM BASE TO WIDEST POINT (cm)	28.67
LENGTH FROM BASE TO 1ST LOBE (cm)	23.33
# OF LOBES	6
LEAF BASE SHAPE	
COLOR OF LEAF VEINS	Light Yellow
SHAPE OF APEX	Pointed
LEAF MARGIN	22
LEAF COLOR	Dark Green
LEAF SURFACE	Smooth
LEAF FLEXIBILITY	
UPPER ROOT HAIRS	None
BOTTOM ROOT HAIRS	None

NUTRIENT COMPOSITION

Varieties	Total Ash (%)	Nitrogen %	Protein %	Brix %	Iron (mg/kg)	Manganese (mg/kg)
Balekana ni Samoa	1.6	0.21	1.29	12	38.5	14.4
Uto Vula	1.29	0.17	1.03	8.5	52.8	12.1
Viroasola	1.74	0.14	0.87	23.8	44.1	7.54
Lasawa	1.64	0.16	1	13.4	47.3	8.86
Uto Karokaro	0.7	0.3	1.89	9.1	56.9	12.8
Oqo	1.63	0.17	1.06	12.5	68.2	5.64
Liva	1.79	0.18	1.14	10	71.8	9.04
Balekana Dina	1.5	0.18	1.1	10.4	69	8.28

SEEDED & NON SEEDED VAR.

No	NON SEEDED	SEEDED
1	OQO	LIVA
2	LASAWA	SAVISAVI
3	UTO DINA	WELESI
4	VIROASOLA	
5	UTO KAROKARO	
6	BALEKANA NI SAMOA	
7	BOKASI	
8	UTO VULA	
9	BALEKANA DINA	
10	SEISEI	
11	VUNIDAWA	
12	UTO VATU	

BREADFRUIT ANALYSIS	KAROKARO	B/DINA	UTO VATU	SAVISAVI	LIVA	B/SAMOA	BOKASI	SEISEI	VIROASOLA	LASAWA	UTO DINA	WELESI	VUNIDAWA	OQO	UTO VULA
LOCATION	Muana Village, Tunuloa	Natewa Village	Sese Village,Saqani	Natewa Village	Natewa Village	Natewa Village	Natewa Village	Naboutini, Saqani	Natewa Village	Natewa Village	Natewa Village	Natewa Village	Sese Village,Saqani	Natewa Village	Natewa Village
FRUIT MEASUREMENTS															
FRUIT SHAPE	Round	Round	Round	Round	Oval	Oblong	Round	Round	Round/Oval	Round/Oval	Oval	Oval	Oval	Round	Round/Oval
FRUIT SKIN TEXTURE	Rough,Sharp point skin	Smooth	Rough	Smooth	Smooth	Smooth	Rough, Sharp pointy	Smooth	Rough,Sand paper like	Rough	Rough skin	Rough, Sharp pointy	Smooth	Smooth	Rough (light)
FRUIT WEIGHT (grams)	396	422	475	672	700	758	1223.5	1434	1517.4	1733	1774	1831.5	1904.7	2080.2	2458
FRUIT CIRCUMFERENCE (cm)	30.5	29	46	36.5	46.6	35.14	40	45	51.2	47.4	45.5	52.5	50	54.2	55
FRUIT LENGTH (cm)	10.25	10.625	12.3	12	15.8	13.75	14.75	16	18.7	17.3	19	18	18.93	17.3	19.5
FRUIT DIAMETER (cm)	9.5	10.5	10	11.25	10.5	10.75	14	14.5	12	15.25	14.25	15.75	15.2	16.25	17
FRUIT COLOR	Light Green	Light Brown	Green	Light Green	Light Yellow	Light Yellow	Light Yellow	Light Green	Light Green	Light Green	Light Green	Light Green	Greenish Yellow	Light Green	Light Green
LENGTH OF PEDUNCLE (cm)	7.25	4.625	6.75	4.75	7.25	6.25	7.75	5.5	7.5	8.7	8	8.5	7.83	8.7	8.5
COLLAR NECK (cm)	2.25	4.5	2.55	3.25	2.5	4.5	3.25	4	2.5	2.5	2.25	3.5	3.5	4	4
PEDUNCLE INSERTION (cm)	1.5		1	1.75	1.75	1.75	2.25	2	1.5	1.5	1.5	2.25	2.1	1.75	2
LATEX	none 5 %	none, 0%	none	Light, 20%-30%	Light thin/Light 10%	non sticky 10%	Milky and sticky gum&thick 50%	50% White, not thick	Light 9%	Light/Watery Light 5%	Light 8%, Light watery 6%	Light,Watery ,Thick,Gum sticky	Watery,Thick,Gum sticky	Light 2 %	Light Watery & Slightly Sticky
WIDTH AT MIDPOINT (cm)	5	5.5	4.4	3	5.5	5	7.25	7	6.25	7.5	7.25	8.25	8	8.75	8.75
WIDTH AT SHOULDER (cm)	6.5	5	6.7	8.25	7.25	5	10	9.5	7.25	7	7.75	9.75	8.6	9	8.25
LENGTH OF CORE (cm)	5.5	7	4.25	6.25	6.25	9	8.75	9	8.5	6.75	11.25	11.5	10	7.25	10.25
WIDTH OF CORE (cm)	2.25	3	2.75	3.25	3.25	2.75	4.5	4	2.75	3.25	3.25	5.25	2.83	3	3.25
FLESH COLOR	Yellowish white	Light Yellow	Light cream/ Cream white	White cream/Light color	Light Yellow	Light Yellow	Light Yellow/Cream White	Yellowish White	Whitish yellow	White/Whitish Yellow	Whitish yellow/Cream white	Light/Whitish Yellow	Cream	White	Whitish yellow

The three categories are small (396 to 758g) comprises of 6 varieties, medium (1223.5 to 1904.7g) with 7 varieties and large (2080.2 and 2458g) which include two varieties. Fruit characteristics showed that small varieties generally has short fruit circumference, length and diameter, followed by medium fruits and large fruits, except for Liva and Bokasi varieties which has slightly longer and shorter fruit measurements respectively. The characterization data showed that there are similarities on the leaf characteristics amongst the categories as well as diversity within the categories.

RECOMMENDATION AND CONCLUSION

- Tissue culture – conservation & planting material
- Yield mapping of each variety
- DNA fingerprinting
- PGR conservation - Establishment of formal orchard at the village
- National breadfruit survey – Reconfirmation of the distribution of varieties
- Awareness and promotion of food security

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