

Potassium levels in a range of foods and drinks consumed in Mauritius

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Introduction

Potassium is an essential mineral nutrient, and high potassium intake is associated with lower mortality risk [1]. Thus people are advised to increase their consumption of fruits and vegetables which are natural sources of potassium. Since potassium is readily excreted by people with normal kidney function, and based on estimates of the generally low potassium intakes in European and North American populations, no Tolerable Upper Intake Level (UL) has been set [2, 3].

However, certain groups of people, such as those with renal failure, are at risk of hyperkalemia [4] and people with chronic kidney disease, and on dialysis are advised to restrict their intake of potassium [5]. To help patients, a number of websites, such as [5-7] and publications, such as [8-10] provide the potassium levels in different foods. While these sources are very useful and much of the information is freely available on the web, there is a dearth of information about foods that are eaten in certain parts of the world, such as in the Republic of Mauritius.

The aim of this pilot study was therefore to measure the potassium levels in a sample of drinks and plant foods that are commonly consumed in the island Republic of Mauritius.

Rationale for the study: Kidney disease affects significant numbers of Mauritians. At the end of 2014, there were 1132 individuals on dialysis in Mauritius [11]. Diabetes - the principal cause of death in Mauritius (25% in 2014) [11] – is also known to be a major risk factor for kidney disease. This pilot study was conducted in April 2015 in order to identify foods and drinks that are naturally lower in potassium, and which would therefore be more user-friendly to individuals who need to restrict their potassium intake.

Method

The potassium content was measured using a portable potassium meter – Laquatwin from Horiba

(<http://www.horiba.com/application/material-property-characterization/water-analysis/water-quality-electrochemistry-instrumentation/compact/details/b-731-laquatwin-compact-potassium-ion-meter-17163/>)

The meter was used as per the Instruction Manual.

Drinks (thoroughly mixed) were directly placed on the sensor.

Solid foods were firstly blended with a small amount of tap water. The blend was then made up to 100ml and mixed. A few drops of this mixture was placed on the sensor. Sometimes it was necessary to strain the mixture to avoid the placement of solid material on the sensor.

Results

The tables below show the potassium concentrations in commonly used drinks and foods in Mauritius. These values are similar to values for the same foods measured in different parts of the world, and shows that the portable potassium meter and the methodology are reliable.

The results may be used by patients wishing to limit their potassium intake. However, it must be noted that more work needs to be done to repeat the measurements using more samples in order to obtain average and standard deviation values, and to analyse a larger range of commonly used foods and drinks in the Mauritian diet.

Disclaimer The results may be used by patients wishing to limit their potassium intake. The names of the fruits and vegetables used in this paper are those that are commonly used in Mauritius. It is recognised that scientific names are needed; however, these were not easy to obtain at this point. This pilot study was conducted for personal use and is published freely in the hope that a more thorough investigation will be conducted through official routes, and that the official results will be widely distributed to all those who are likely to benefit. The authors recommend that individuals who wish to restrict their potassium intake do so only under medical supervision. The authors cannot accept any liability for damages resulting from the use of these pilot results.

Dedication This work is dedicated to our dearest Mounou, Vidya Prakash Murdan.

Drinks	Name/source	Potassium concentration (mg of potassium per Litre of:)
tap water	Bon Accueil	1
	Rose Hill	1
	Curepipe	0
Bottled water	Dasani sparkling	1
	Evian still	2
	Vital still	2
	Crystal still	2
	Vital sparkling	82
Fizzy drinks	Sprite	2
	soda water Schweppes	3
	Fanta passion	3
	Coca Cola	9
	Fanta orange	12
	Eski Rouge (Fraise/Strawberry)	13
	Mirinda orange	16
	Pepsi	20
Fruit Juices/drinks	SunUp Blackcurrant (diluted 1+5, as per instructions on bottle)	110
	Sunquick Mandarin (diluted 1+9, as per instructions on bottle)	150
	Grapetiser 100% reed grape juice sparkling (500ml bottle)	460
	Grapetiser 100% reed grape juice sparkling (750ml bottle)	630
	Monis	820
	Ceres Nectars Peach melba drink	1300
	Sunny (100% Jus de Fruits Raisin/100% Fruit Juice Grape)	1500
	Appletiser 100% Apple juice (500 ml bottle)	2200
Others	Lucozade (Energy, Original)	66
	San Pellegrino aranciata can	280
	Tea (1 tablespoon in 1 mug)	610
	Malta Guinness	610
	Coffee (Nescafe Classic instant; 1 heaped teaspoon in 1 mug)	720
	Dahi (lait caille, vanille)	1300
	Dahi (lait caille, fraise)	1400
	Dahi (lait caille, peche)	1400
	Dahi (lait caille, amande)	1500
	Red wine (Chateau Haut Coureau, Bordeaux)	1600
	Coconut water (fresh coconut)	4700

Fruits and Vegetables	Name in french/creole	English name	Potassium concentration (mg of Potassium in 100g of fruit/vegetable)
Green leafy vegetables	brede Basmati		80
	Petsai		180
	brede Martin		340
	brede Tom Pouce	Pak Choi	450
	brede Blanc		780
	laitue	lettuce	800
	brede Chouchou		830
	brede Cresson	Watercress	1225
	brede Malbar		1330
	brede Epinard	Spinach	1500
	brede Songe		1530
	brede Souflette		1720
	brede Mouroung		2860
	Other vegetables	Beansprouts	Beansprouts
Manioc		Cassava	100
Samkot			100
Pipengaye (flesh only)			125
Patol			130
Chouchou			150
Poivron (jaune)		Pepper (yellow)	150
Patisson			160
Pipengaye (skin only)			170
Giromon		Squash	190
Concombre		Cucumber	200
Choufleur		Cauliflower	230
Calebasse/calabash		Bottle gourd	260
Le Choux rouge		Red cabbage	260
Violet			420
Patate (blanc a l'interieur)		Sweet potato (white flesh inside)	460
Lalo		Ladies fingers /okra	570
Baton Mouroung			575
Margoz (kerala) court		Bitter gourd (short)	600
Tomate (pomme d'amour)		Tomato	740
Bringel (long et mince)		Aubergine (long and narrow type)	900
Rave (blanc) (Mouli)		Radish	920
Carotte		Carrot	1050
Bringel anguive		1070	
Beterave	Beetroot	1325	
Arouille		1950	
Pomme de terre	Potato	2380	
Local fruits	Grenadine (poulpe)	Passionfruit (pulp)	130
	Carambole	Starfruit	140
	Papaye	Papaya	180
	Jambose		220
	Jamblon		220

	Fruit de Cithere		220
	Goyave	Guava	260
	Grenade (seeds only)	Pomegranate (seeds only)	280
	Kumquat	Kumquat	300
	Banane	Banana	330
	Goyave de Chine	a type of guava	425
	Pamplemousses	Grapefruit	450
	Ananas	Pineapple	600
	Prune locale		670
Imported fruits	Raisin (rouge)	Grape (red)	130
	Pomme (rouge)	Apple (red)	160
	Kiwi	Kiwi	180
	Raisin (vert)	Grape (green)	190
	Poire	Pear	200
	Pruneau	Plum	335
	Raisin (noir)	Grape (black)	660
Cereals, Grains, nuts and Others	Riz (Basmati blanc, cuit)	Rice (white Basmati, cooked)	23
	Cornflakes	Cornflakes	70
	Pain maison	Bread (roll)	130
	Oatflakes	Oatflakes	180
	Weetabix	Weetabix	330
	Sesame grain (grille)	Sesame seed (grilled)	590
	Pistache (bouill)	Peanuts (boiled)	1090
Miscellaneous	tulsi leaves		350
	apanah leaves		100

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