

Cs<sup>137</sup> in Daily Rations of Foods Grown at Rongelap Atoll

5002275

Sample No.	μc/ Sample	GRAMS							
		Total Weight of Daily Ration as Received	Coconut Meat (mature, green, (sprouting)	Coconut Milk	Fresh Pan- danus	Pandanus "Paste"(Partial- ly Dried)	Tacca (Arrow- root)	Bread Fruit	Misc.
12	0.0075	584	159	129	61	53	(dry) 31	74	Squash 22 Papaya 55
8	0.0073	427	132	102	85	see (29)* misc.			Rice-Pandanus* mixture 88
1	0.0071	544	93	98		40		222	
5	0.0055	91				91			
7	0.0049	546	283	108	79	50	(dry) 19		Fish 7
6	0.0044	584	88		101			395	
14	0.0037	519	238	238	43				
10	0.0025	210			159			44	Fish 7
13	0.0023	159	16		41	14	(cooked) 17	71	
9	0.0019	342	124	158	60				
2	0.0015	314	202	68		44			
11	0.0015	208	124	26				58	
4	0.0009	165	95		30	33			
Average	0.0039	361	119	71	51	27	5	66	11

Each sample number represents one daily ration for one adult male in August 1958. No imported foods are included with the exception of the rice in sample number 8.

\*estimate that about 1/3 of rice-pandanus mixture with total weight of 88 gms consisted of Pandanus.

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Cs<sup>137</sup> in Food Samples Collected at Rongelap  
Atoll, August 1958

Comparison with Maximum Permissible Intake

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Maximum daily intake found for one person:

$$7 \times 10^{-3} \mu\text{c}$$

MPC in water =  $1.5 \times 10^{-3} \mu\text{c/ml}$  (Handbook 52)  
Daily intake of water as fluids by standard man =  $1.5 \times 10^3 \text{ ml/day}$   
(Radiological Health Handbook).

Maximum permissible daily intake taken as

$$(1.5 \times 10^{-3} \mu\text{c/ml}) (1.5 \times 10^3 \text{ ml/day}) = 2.25 \mu\text{c/day}.$$

Maximum daily intake of Cs<sup>137</sup> for one person is about three one  
thousandth of the maximum permissible.

$$\frac{0.007 \mu\text{c/day}}{2.25 \mu\text{c/day}} = 0.0031$$

Average daily intake of Cs<sup>137</sup> for one person (average of 13  
daily rations) was found to be:

$$3.9 \times 10^{-3} \mu\text{c}$$

Average daily intake is less than two one thousandth of the  
maximum permissible.

$$\frac{0.0039 \mu\text{c/day}}{2.25 \mu\text{c/day}} = 0.0017$$

Components of Individual Daily Rations Exclusive of Imported Foods  
such as Rice and "C-Ration"\* (weights in grams)

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No.	Name	Meat from mature coconut	Meat from drinking nut	Coconut milk, green nuts	Edible portion of fresh Pandanus	Bread - fruit	Dried Pandanus paste	Other	
1.	Jojala	62	31	98	--	222	40	--	
2.	Jemin	202	-	68 <sup>(ripe)</sup> <sub>(nut)</sub>	--	--	44	--	
3.	Tutak	45	--	--	127	--	--	--	
4.	Ijo	95	--	--	30	--	33	--	
5.	Aine	--	--	--	--	--	84	--	
6.	Hainrig	88	--	--	101	395	--	--	
7.	Matzule	166	117	108	79	--	50	19(1)	7(2)
8.	Etmon	-	78	102	85	--	--	54(3)	108(4)
9.	Kotae	68	56	158	60	--	--	--	--
10.	Jeiro	--	-	--	159	44	--	--	7(2)
11.	Nabtal	34	51	26	--	58	--	39(3)	--
12.	M. Kalal	54	105	129	61	74	53	31(1)	22(6) 55(7)
13.	Bedbedin	16	--	--	41	71	14	17(5)	--
14.	Titikos	150	88	238	43	--	--	--	--

\*Bwio brought in daily rations of local products from 14 people. He explained that in some cases little was given (especially Aine) because C-ration and rice were the principal foods eaten.

(1) Tacca Powder (2) Fish, Cooked (3) Sprouted Coconut (4) Rice-Pandanus paste (5) Tacca, Cooked (6) Squash (7) Green Papaya

List of foods eaten according to Kine:

Rice, C-ration, Fish (muscle only), Coconut, Pandanus,  
Breadfruit, Arrowroot, Tridacna, Squash, Langusta, Chicken, Pig,  
Birds, Fish, Crabs etc., usually boiled - boiling water discarded.

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Information from Bwio <sup>was village secretary</sup> who spent an entire evening going to different families to get his information.

### Coconut (Ni)

- A. We drink the juice. B. Eat the copra. C. Eat the meat inside the small plant. (this refers to the spongy material in the sprouted coconut). (1) Eat without cooking. (2) Boil it and eat it.

### Breadfruit (Ma)

- (1) Cook it on the fire. (2) Take the skin off and boil it. (3) How to make cheese: Take the skin off and put in salt water for 3 days, and take it out and bury. (note: wrapped in breadfruit leaves). After one week, take it out and cook it (bake or boil) and eat, but it can stay under the soil for 2 years or more.

### Pandanus ( Bob or Bop )

- (A) Eat the fruit without cooking it. (B) Cook it and eat it. (1) Boil (2) Bake (3) There a kind of food we call it 'Jenkun', very much like 'catsup'. Bake the fruit and get the meat out and dry it. It can stay more than 5 years.

### Arrowroot or Tacca (Makmok or Mokmok)

First we clean up the roots with salt water (sea water), and squeeze it into a bucket full of salt (sea water) and wait for about 3 hours. After 3 hours the root begins to freeze (coagulation), then pour off the water and get the meat and dry it.  
How to cook: (A) Bake, (B) Boil it. Can't eat it raw.

### Fish

Bake it, boil it, salt it and dry it. We cook bird, chicken, clam, pig and lobster in the same way.

Local Medicines - Information obtained from Jabwe (local doctor) a midwife, Samsen and one other man who works in the hospital but whose name was not written into notes.

Scaevola (Konnot)

Leaves and stems used.

Juice from stem squeezed into eye - sometimes stops pain in eye.

Leaves crushed in hollow stone then wrapped in cheesecloth, dipped in water and squeezed out. Mother drinks one cup 3 x daily for 2-3 weeks after delivery.

Guettarda (Wit)

For toothache, pack the cavity with the flower. Sometimes works better than APC, sometimes doesn't work.

Dodder (Kanon)

For headache. Prepared as Scaevola leaves. Small cup full 3 x a day for one week. Sometimes better than aspirin.

Triumfetta (ATAT)

For coughing and griping pains in abdomen. Prepared same as Scaevola leaves, 3 x a day for 1 - 2 weeks. Big cupful for adults, small cupful for children.

Messerschmidia (Kiron)

For diarrhea and deep wounds. For diarrhea-prepared same as Scaevola leaves. For deep wounds: 10 or 12 leaves crushed, juice squeezed out into one cup water, boiled and painted on wound while hot. Also used for stomach ache. Generally used in place of combination of aspirin and sulf-a-thiazole.

Aliophylus (Kitok)

For general "body pain"

Prepared as Scaevola leaves. Same effect as Thiamin chloride.

Papaya (Kenipu)

For stomach ache - same effect as "Andejohi".

Fruit (meat only) boiled, entire concoction dried and powdered.  
Dose 1-2 grams.

This by no means exhausts the list of plants and preparations used, but there was no time to obtain more of this sort of information.

Jabwe and the others also insisted that when sterile water is not available the milk from drinking coconuts (green ones) can be used for I. V. infusions in cases of severe loss of blood, with excellent results. They say they learned this during Japanese times and used it on several occasions during the war.

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$\text{Sr}^{90}$  in the Muscle of Land Crabs Collected  
at Rongelap Atoll

Island	Date of Collection	Laboratory	No. of Samples	$\text{Sr}^{90}$ d/m/g dry	$\text{Sr}^{90}$ d/m/g wet	Sunshine units
Kabelle	July 1956	NYO	2		12.8 $\pm$ 3.2	3730 $\pm$ 870
	"	U. W.	3		58.7 $\pm$ 27	6307 $\pm$ 1830
	July 1957	U. W.	3	44.3 $\pm$ 8.6	10.2 $\pm$ 0.05	2470 $\pm$ 1480
	March 1958	U. W.	5	148 $\pm$ 12	37.4 $\pm$ 4.2	7700 $\pm$ 1830
	August 1958	U. W.	6	124 $\pm$ 30	31.9 $\pm$ 10	4311 $\pm$ 309
Rongelap	July 1957	U. W.	2	19.5 $\pm$ 9.5	4.25 $\pm$ 1.65	1025 $\pm$ 875
	March 1958	U. W.	5	33.6 $\pm$ 11	8.22 $\pm$ 3.7	3650 $\pm$ 1500
	August 1958	U. W.	5	40.7 $\pm$ 13	9.56 $\pm$ 3.44	1696 $\pm$ 1860
Eniaetok	March 1958	U. W.	2	51 $\pm$ 2	12 $\pm$ 0	5270 $\pm$ 1860
Erapuotsu	August 1958	U. W.	1	34.7	7.29	1783

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$Sr^{90}$  in the Liver of Land Crabs Collected  
at Rongelap Atoll

Island	Date of Collection	Laboratory	No. of Samples	$Sr^{90}$ d/m/g dry	$Sr^{90}$ d/m/g wet	Strontium units
Kabelle	July 1956	NYO	2		29.5 $\pm$ 4.5	3610 $\pm$ 990
	" "	U.W.	2		44.5 $\pm$ 2.5	4680 $\pm$ 1570
	July 1957	U.W.	2	245 $\pm$ 65	119 $\pm$ 41	4800 35000
	March 1958	U.W.	5	218 $\pm$ 103	121 $\pm$ 52	3830 $\pm$ 1152
	August 1958	U.W.	4	204 $\pm$ 176	96 $\pm$ 88	2400 $\pm$ 1790
	July 1957	U.W.	2	61.5 $\pm$ 5.5	21.5 $\pm$ 6.5	1800 $\pm$ 200
Rongelap	March 1958	U.W.	5	67 $\pm$ 23	46 $\pm$ 13	2497 $\pm$ 668
	August 1958	U.W.	4	44 $\pm$ 13	31 $\pm$ 4	1700 $\pm$ 427
Eniaetok	March 1958	U.W.	2	136 $\pm$ 17	79 $\pm$ 12	4727 $\pm$ 1055
	August 1958	U.W.	1	41	36	1500

$Sr^{90}$  in the Skeletons of Land Crabs Collected  
at Rongelap and Uterik Atolls

Island	Date of Collection		Laboratory	No. of Samples	$Sr^{90}$ d/m/g dry	$Sr^{90}$ d/m/g wet	Strontium units
Ksabelle	July	1956	NYO	3		1300 <sup>±</sup> 280	3240 <sup>±</sup> 760
	"	"	U. W.	3		1950 <sup>±</sup> 470	4240 <sup>±</sup> 970
	July	1957	U. W.	3	3570 <sup>±</sup> 610	2430 <sup>±</sup> 420	5830 <sup>±</sup> 920
	March	1958	U. W.	5	3280 <sup>±</sup> 300	2360 <sup>±</sup> 210	6300 <sup>±</sup> 550
	August	1958	U. W.	6	3462 <sup>±</sup> 780	2708 <sup>±</sup> 685	6300 <sup>±</sup> 1375
	March	1959	U. W.	4	3110 <sup>±</sup> 593	2360 <sup>±</sup> 294	5680 <sup>±</sup> 914
Rongelap	July	1956	NYO	1		750	2200
			U. W.	1		1310	3360
	July	1957	U. W.	2	1500 <sup>±</sup> 350	955 <sup>±</sup> 245	2350 <sup>±</sup> 650
	March	1958	U. W.	5	1660 <sup>±</sup> 441	1180 <sup>±</sup> 309	3140 <sup>±</sup> 860
	August	1958	U. W.	5	1211 <sup>±</sup> 156	939 <sup>±</sup> 117	2200 <sup>±</sup> 294
Eniaetok	March	1958	U. W.	2	3200 <sup>±</sup> 800	2250 <sup>±</sup> 550	6000 <sup>±</sup> 1200
	August	1958		1	1782	1414	3200
Uterik	March	1959	U. W.	2	140 <sup>±</sup> 0	111 <sup>±</sup> 2	255 <sup>±</sup> 5

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