

ANALYSES OF LILY BRAND CANNED FISH  
IMPORTED IN FIJI FROM JAPAN

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By

DR UDAY RAJ AND HAZRA HAQ  
INSTITUTE OF MARINE RESOURCES  
THE UNIVERSITY OF THE SOUTH PACIFIC  
SUVA, FIJI.

For

MR MAHADEO  
MAHATEX AGENCY  
SUVA

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## INTRODUCTION

3 batches of imported canned fish, packed for Ryoshoku Limited Japan were supplied to us by Mahtex Agency for quality and toxicity tests. The batches were as follows: Lily brand pilchards in tomato sauce. Batch No: SAT MHC3 4904, SAT MHC4, 4528 and Lily Brand mackerel in natural oil. Batch No: MKN MHC2 4528.

We carefully opened 10 cans of each batch of fish and analysed them for contents. The contents of each can were separated into flesh, viscera and fluid and the relative weights of these measured subsequently, pooled 100 grms of viscera were analysed for lipophilic toxin(s) as per method described in several earlier reports of the institute. The results of our investigations are given in Table 1 and Table 2.

## RESULTS

1. The relative weights of fluid, flesh and viscera are summarised in Table 1.
2. The toxicity test results are given in Table II.

## REMARKS

Although the levels of toxicity in viscera of Lily pilchards in tomato sauce (Batch SAT MHC3 4904) were detected, the levels are very low. It is felt that the packing Company should be advised to take all necessary steps to eliminate viscera from the canned fish.

TABLE I: RELATIVE WEIGHTS OF FLUIDS, FLESH AND VISCERA IN LILY BRAND CANNED FISH TESTED IN FIJI.

SAMPLE	FLUID		FLESH		VISCERA			REMARKS	
	Wt. (g)	% Total	Wt (g)	% Total	Wt (g)	% Total	% Tissue	Viscera	
<u>SAMPLE:</u> LILY									
BRAND PILCHARDS									
IN TOMATO SAUCE									
<u>BATCH NO:</u> SAT									
MHC3 4904									
<u>CAN NO:</u>	1	62.80	33.81	117.22	63.10	5.74	3.09	4.67	Liver, fats
	2	34.85	20.92	126.48	75.93	5.25	3.15	3.99	Liver, fats
	3	36.00	21.76	125.00	75.57	4.41	2.67	3.41	Liver
	4	51.73	21.22	184.58	75.70	7.51	3.08	3.91	Liver, guts
	5	39.16	21.74	132.33	73.45	8.68	4.82	6.16	Liver, guts
	6	24.58	14.43	134.10	78.70	11.71	6.87	8.03	Liver, guts
	7	52.52	29.20	120.77	67.15	6.57	3.65	5.16	Liver, guts
	8	53.86	28.09	129.34	67.46	8.54	4.45	6.19	Liver, fats
	9	53.00	28.73	125.62	68.09	5.87	3.18	4.46	Liver, guts, fats
	10	55.95	29.86	125.51	66.99	5.90	3.15	4.49	Liver, guts, fats
<u>AVERAGE AV ± SD</u>		46.45 ± 11.38	24.90 ± 5.53	132.10 ± 18.12	71.24 ± 4.97	7.02 ± 2.04	3.81 ± 1.20	5.05 ± 1.32	

TABLE 1 A

SAMPLE	FLUID		FLESH		VISCERA			REMARKS	
	Wt (g)	% Total	Wt (g)	% Total	Wt (g)	% Total	% Tissue	Viscera	
<u>SAMPLE:</u> LILY BRAND PILCHARDS IN TOMATO SAUCE									
<u>BATCH NO:</u> SAT MHC4 4529									
<u>CAN NO:</u>	1	188.00	42.95	243.35	55.60	6.35	1.45	2.54	Liver,fats
	2	202.12	47.96	219.29	52.04	N O	V I S C E R A		
	3	206.00 <i>206</i>	48.33	220.25	51.67	"	"		
	4	153.00	35.83	274.00	64.17	"	"		
	5	179.75	42.75	238.00	56.60	2.75	0.65	1.14	Liver,gonads
	6	188.00	41.96	257.00	57.37	3.00	0.67	1.15	Liver,gonads
	7	160.00	36.95	269.00	62.13	4.00	0.92	1.47	Liver,fats
	8	160.00	36.12	281.00	63.43	2.00	0.45	0.71	Guts,fats
	9	167.00	37.87	267.00	60.54	7.00	1.59	2.56	Guts,fats
	10	178.00	40.73	256.00	58.58	3.00	0.69	1.16	Liver,guts,fats
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AVERAGE AV $\pm$ SD		178.19 $\pm$ 17.21	41.15 $\pm$ 4.32	252.49 $\pm$ 20.56	58.21 $\pm$ 4.18	2.81 $\pm$ 2.37	0.64 $\pm$ 0.54	1.07 $\pm$ 0.90	
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<u>SAMPLE:</u> LILY BRAND PILCHARDS IN TOMATO SAUCE									
<u>BATCH NO:</u> SAT MHC3 4904									
<u>CAN NO:</u>	1	29.90	17.94	136.81	82.06	N O	V I S C E R A		
	2	27.00	14.66	152.00	82.52	5.20	2.82	3.31	Guts,liver
	3	67.00	27.95	168.00	70.07	4.75	1.98	2.75	Fats
	4	58.15	32.04	119.73	65.97	3.61	1.99	2.93	Guts
	5	41.90	22.85	136.00	74.16	5.48	2.99	3.87	Fats
	6	56.00	30.60	127.00	69.40	N O	V I S C E R A		
	7	31.00	17.14	147.00	81.26	2.91	1.61	1.94	Guts,fats
	8	60.00	30.86	129.00	66.36	4.00	2.78	3.01	Guts,fats
	9	35.00	19.77	140.00	79.10	2.00	1.13	1.41	Guts,fats
	10	45.00	23.08	150.00	76.92	N O	V I S C E R A		
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AVERAGE AV $\pm$ SD		45.10 $\pm$ 13.64	23.69 $\pm$ 6.01	140.55 $\pm$ 13.42	74.78 $\pm$ 6.15	2.80 $\pm$ 2.07	1.53 $\pm$ 1.14	1.92 $\pm$ 1.41	

TABLE II: TOXICITY SCORE OF CANNED FISH BIOASSAYED FOR LIPOPHYLIC TOXIN(S)

NO	SAMPLE	BATCH/ CAN NO.	TISSUE	TOXICITY SCORE MU/100g
1	LILY PILCHARDS IN TOMATO SAUCE	SAT MHC3 4904	VISCERA FLESH	3.57 N.D.
2	LILY PILCHARDS IN TOMATO SAUCE	SAT MHC4	VISCERA FLESH	N.D. N.D.
3	LILY PILCHARDS	SAT MHC3 4904	VISCERA + FLESH	2.5
4	LILY MACKEREL IN NATURAL OIL	MKN MHC2 4528	FLESH	N.D.

APPENDIX: COST OF ANALYSES OF CANNED FISH

<u>Chemicals</u>	\$	
Acetone	12.00	
Diethyl ether	12.00	
Haxane	10.00	
Methanol	15.00	
Ethanol	2.00	
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Cost per analysis	51.00	
No. of analyses	6	\$306.00

Mice

15 mice @ \$1.75		26.25
Technician time - 20 hrs @ \$2.50		50.00
Report production		20.00
		<hr/>
		402.25
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