

During November 1955, HASL received 12 soil, 12 seawater, 8 vegetation, 1 plankton, 2 algae, 6 fish, and 15 coconut samples collected by A. Seymour of the Applied Fisheries Laboratory, University of Washington. This particular set of samples was collected during October 21-23, 1955 on Rongelap, Kabelle, and Labaredj Islands of Rongelap Atoll and Mogiri Island of Alinginae Atoll.

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Each sample was analyzed at HASL for total activity and Sr-90. Selected samples were analyzed for normal calcium by the oxalate-permanganate titration method, for reporting values in Sunshine Units. Values are reported as of February 27, 1956 and are presented in three sections:

1. A summary of HASL results including a comparison with data obtained from University of Washington Report No. UWFL-43.
2. A complete tabulation of HASL data with pertinent information given for each sample.
3. Notes covering sources of information, analytical procedures, and standardization and counting techniques used at HASL in processing these samples.

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1. SUMMARY OF HASL DATA AND COMPARISON WITH AFL

SOIL

| <u>Area Collected</u> | <u>Depth</u> | <u>Total Activity</u> d/m/g - wet | | <u>Sr-90</u> d/m/g - wet | |
|-----------------------|--------------|--------------------------------------|-------------|-----------------------------|------------|
| | | <u>HASL</u> | <u>AFL</u> | <u>HASL</u> | <u>AFL</u> |
| Kabelle | 0-3" | 6600-15000 | 16000-23000 | 200-510 | N. R. |
| | 3-6" | 300- 620 | 420- 760 | 5- 23 | N. R. |
| Labaredj | 0-3" | 5500- 7500 | 9600-25000 | 190-260 | N. R. |
| | 3-6" | 360- 620 | 230- 550 | 5- 7 | N. R. |
| Rongelap | 0-3" | 3000- 5700 | 3700-45000 | 190-210 | N. R. |
| | 3-6" | 410- 1000 | 800- 1500 | 12- 32 | N. R. |

Total Activity

top 0-3", 6-25 times higher than 3-6" layer (HASL)

Sr-90

top 0-3", 7-50 times higher than 3-6" layer (HASL)

Average % Sr-90 in top soil - 3.9 (HASL)

Average % Sr-90 in bottom soil - 2.3 (HASL)

% Total Activity in top 3"

| | <u>HASL</u> | <u>AFL</u> |
|----------|-------------|------------|
| Kabelle | 96 | 97 |
| Labaredj | 96 | 97 |
| Rongelap | 88 | 89 |

NOTE: Average Sr-90 found in continental United States soil top 0-2", 0.2 d/m/g (HASL)

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SEAWATER

| <u>Area Collected</u> | Total Activity d/m/liter | | Sr-90 d/m/liter | |
|-----------------------|-----------------------------|------------|--------------------|------------|
| | <u>HASL</u> | <u>AFL</u> | <u>HASL</u> | <u>AFL</u> |
| Kabelle | 650 | 300-500 | undet. | N. R. |
| Labaredj | 300 | 300-500 | undet. | N. R. |
| Rongelap | undet. | undet. | undet. | N. R. |
| Mogiri | undet. | undet. | undet. | N. R. |

ALGAE

Rongelap Island

| <u>Location</u> | Total Activity d/m/g - wet | | Sr-90 d/m/g - wet | |
|-----------------|-------------------------------|------------|----------------------|------------|
| | <u>HASL</u> | <u>AFL</u> | <u>HASL</u> | <u>AFL</u> |
| Cistern | 9410 | 8860-23600 | undet. | N. R. |
| Well | 680 | 570- 1880 | ~5 | N. R. |

PLANKTON

Kabelle-Rongelap

| | Total Activity d/m/g - wet | | Sr-90 d/m/g - wet | |
|--|-------------------------------|------------|----------------------|------------|
| | <u>HASL</u> | <u>AFL</u> | <u>HASL</u> | <u>AFL</u> |
| | 44 | 99-418 | undet. | N. R. |

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COCONUTS - (HASL)

| <u>Island</u> | Total Activity d/m/g - wet | | | Sr-90 d/m/g - wet | | |
|---------------|-------------------------------|------------------------|--------------------------|-----------------------|------------------------|--------------------------|
| | <u>Outer husk</u> | <u>Inner shell</u> | <u>Meat and milk</u> | <u>Outer husk</u> | <u>Inner shell</u> | <u>Meat and milk</u> |
| Kabelle | 80 | 20 | 50 | 0.4 | 0.1 | 0.1 |
| Rongelap | 80 | 20 | 40 | 1.0 | 0.2 | 0.2 |
| Labaredj | 200 | 30 | 80 | 2.0 | 0.4 | 0.4 |

% Sr-90

| | |
|---------------|-------|
| Outer husk | ~1% |
| Inner shell | ~1% |
| Meat and milk | ~0.1% |

AFL - reports 0.1% in meat and milk

COMMERCIAL COCONUTS

| | | |
|-----------------------|---------------|---|
| <u>Total Activity</u> | Inner shell | 2 |
| | Meat and milk | 5 |

FISH

| | | Total Activity d/m/g - wet | | Sr-90 d/m/g - wet | | |
|----------|----------|-------------------------------|------------|----------------------|------------|-------|
| | | <u>HASL</u> | <u>AFL</u> | <u>HASL</u> | <u>AFL</u> | |
| Kabelle | Tuna | bone | 31 | N. R. | ~0.2 | N. R. |
| | | muscle | 24 | 40 | undet. | N. R. |
| | | liver | 186 | 1070 | undet. | N. R. |
| Labaredj | Bonito | muscle | 56 | 102 | undet. | N. R. |
| | | bone | 227 | N. R. | undet. | N. R. |
| Rongelap | Goatfish | muscle | 21 | 18-37 | undet. | N. R. |

AFL - Sr-90 undetectable in marine organisms

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2. COMPLETE HASL DATA

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INCOMPLETE DOCUMENT REFERENCE SHEET

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