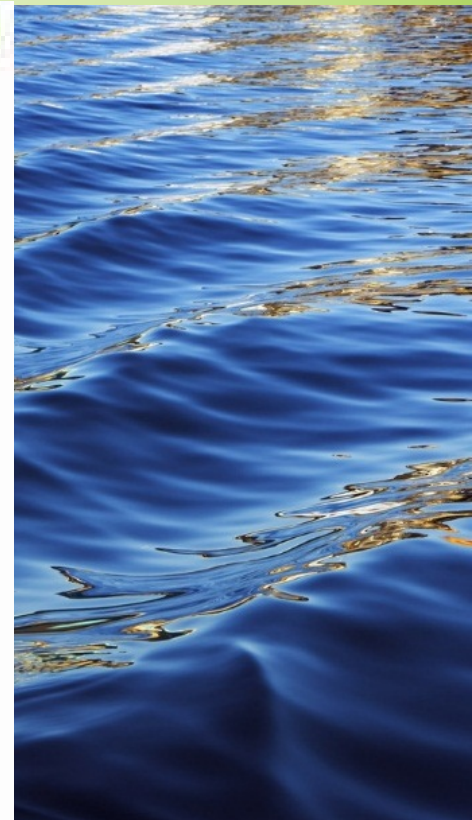


Tritium content in African coconuts

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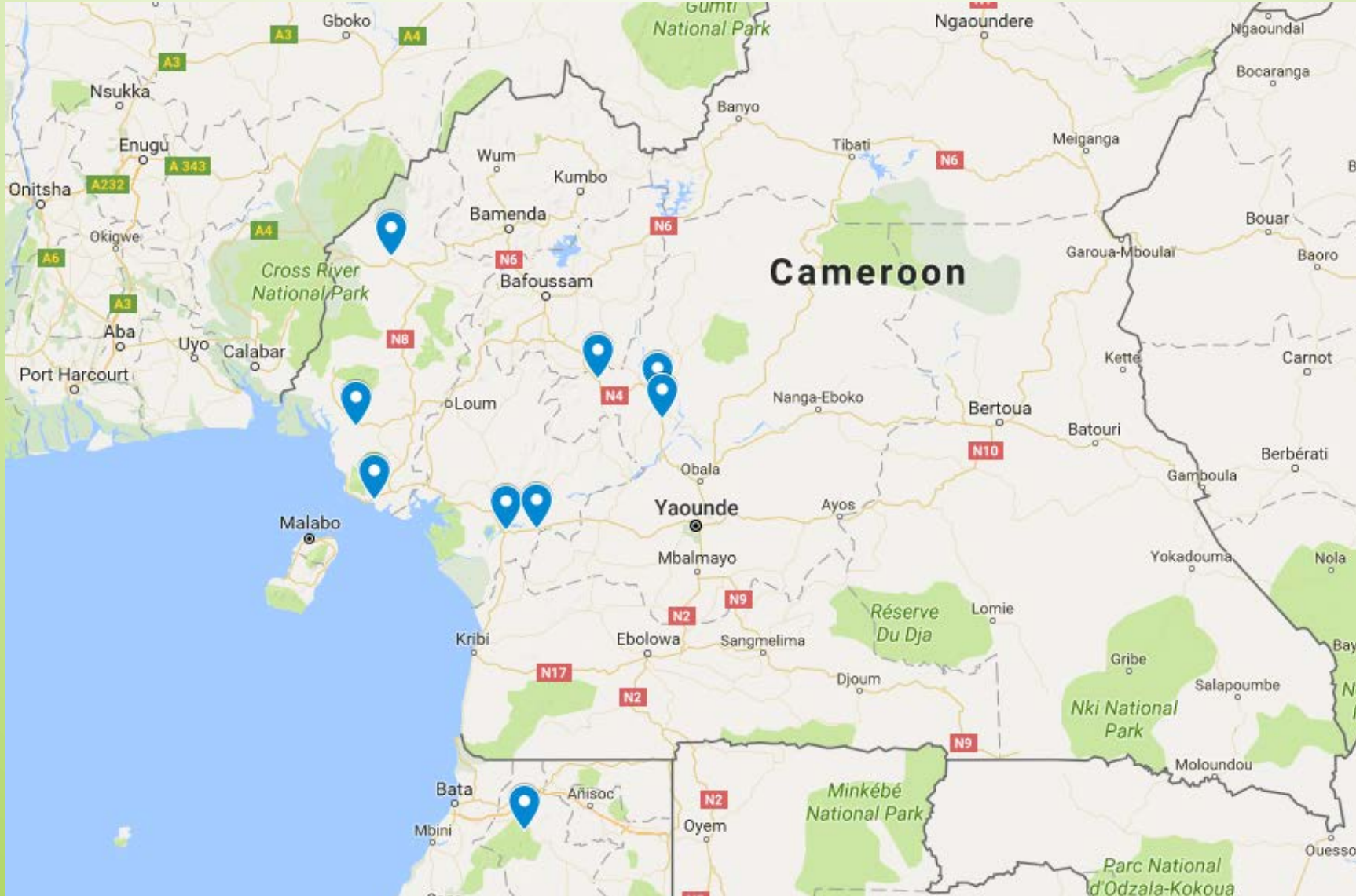
LSC2017 Advances in Liquid Scintillation Spectrometry

The aim

- Narayan et.al. proposed that coconut fruit from India pre-concentrates tritium from environment
- Coconuts are:
 - a important nutrition source in tropical and subtropical regions
 - very popular due to its richness in vitamins, minerals and bioactive compounds
- Is this the truth also for African coconut?

Narayan K. K., Deo J. V., Abani M. C., Natural tritium levels in tender and ripe coconut fruit (*Cocos Nucifera* L.): a preliminary examination, *The science of Total Environment* 256 (2000) 233 - 237

Sampling locations

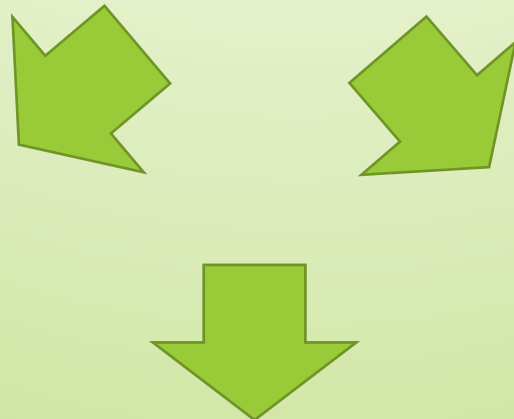




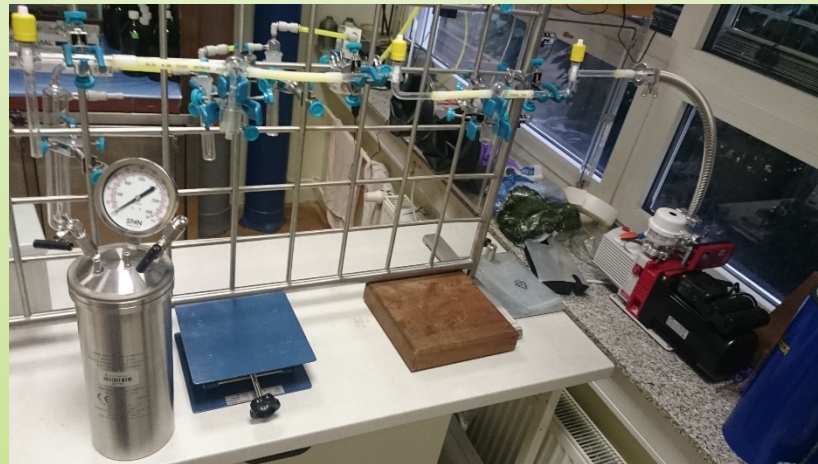
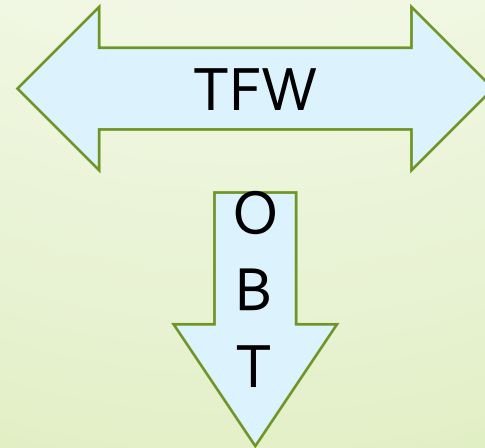
TWF from coconut water

TWF from coconut meat

OBT from coconut meat



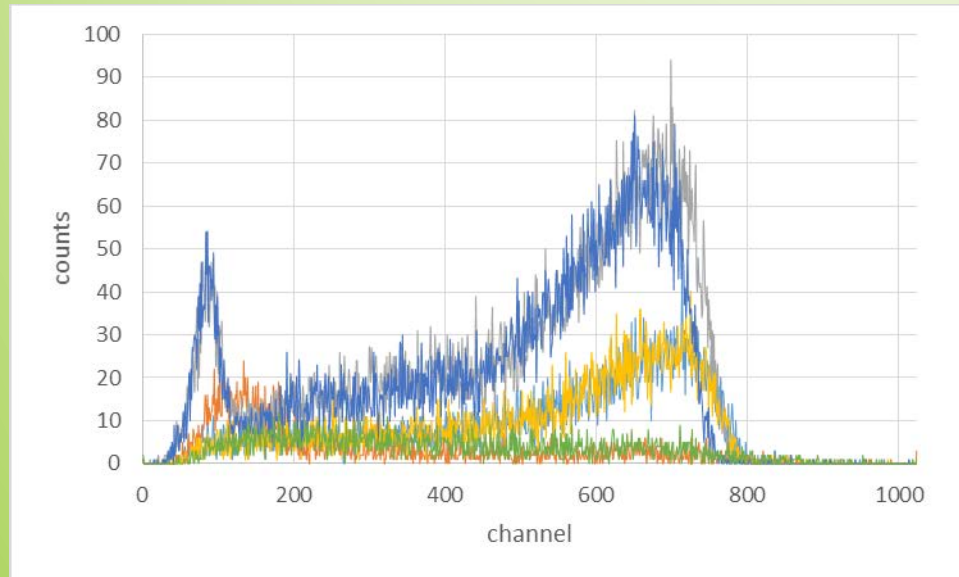
Sample preparation



+ measurement by ISO 17025 accredited procedure

TFW in meat

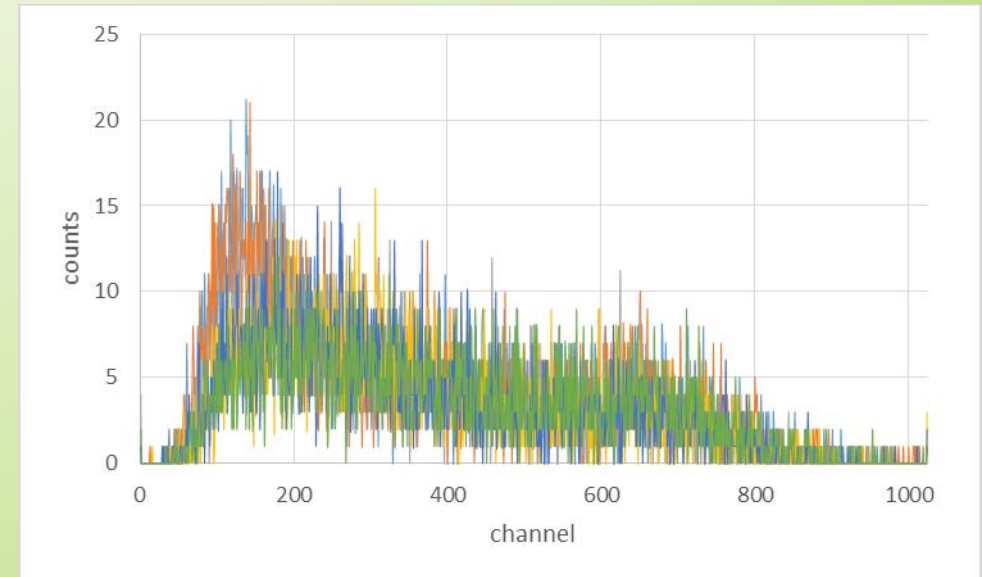
Evaporation



3 < pH > 6

9.6 < $\mu\text{S}/\text{cm}^2$ > 9400

Distillation



5 < pH > 7

65 < $\mu\text{S}/\text{cm}^2$ > 160

Comparison of the sample preparation

Evaporation		Distillation	
SQP(E)	Activity [Bq/L]	SQP(E)	Activity [Bq/L]
742	2.4 ± 1	747	1.7 ± 0.9
743	2.3 ± 0.5	741	1.4 ± 0.7
744	2.4 ± 1.2	744	2.5 ± 1.2

Results

Sample	TFW water [Bq/L]	TFW meat [Bq/L]	OBT meat [Bq/L]
Bafia	< 0.8	< 0.8	1.4 ± 0.7
Edea	1.3 ± 0.5	0.9 ± 0.3	< 0.9
Limbe (low)	1.0 ± 0.9	0.9 ± 0.6	< 0.8
Limbe (tall)	< 0.9	< 0.9	1.8 ± 0.9
Logass	< 0.8	0.9 ± 0.7	< 0.8
Makenene	1.4 ± 0.8	< 1	1.4 ± 0.6
Ivory Coast	/	4.15 ± 0.7	/
Eq. Guinea	/	5.37 ± 0.7	1.2 ± 1.2

Conclusions

- evaporation sample preparation could be applied in any lab
 - attention to heating temperature
 - pH and conductivity measurement
- obtained results are comparable
- low measured activities, there is NO pre-concentration of tritium in coconuts

Any questions or suggestions?

