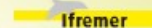




Trends and advancements in the sampling and preservation of samples for the identification of contaminants of emerging concern

March 2nd and 3rd 2016

CIENS Forum, Gaustadalléen 21, 0349 Oslo, Norway



Measuring parabens in surface water: the impact of the field operator

C.Ferret, Botta F., Lepot B.

source of financial support



controlling risks
for sustainable development

Impact of the sampling operations on the final results

**Variability
associated to
sampling conditions
/ operations**



*ILS performed by AQUAREF since
2007 for WFD Priority Substances
in SW and GW*

**Impact of the
sampling material /
équipement**



*Studies conducted by AQUAREF to
assess impact of diethylphtalate
(DEP) and diisobutylphtalate
(DiBP)*

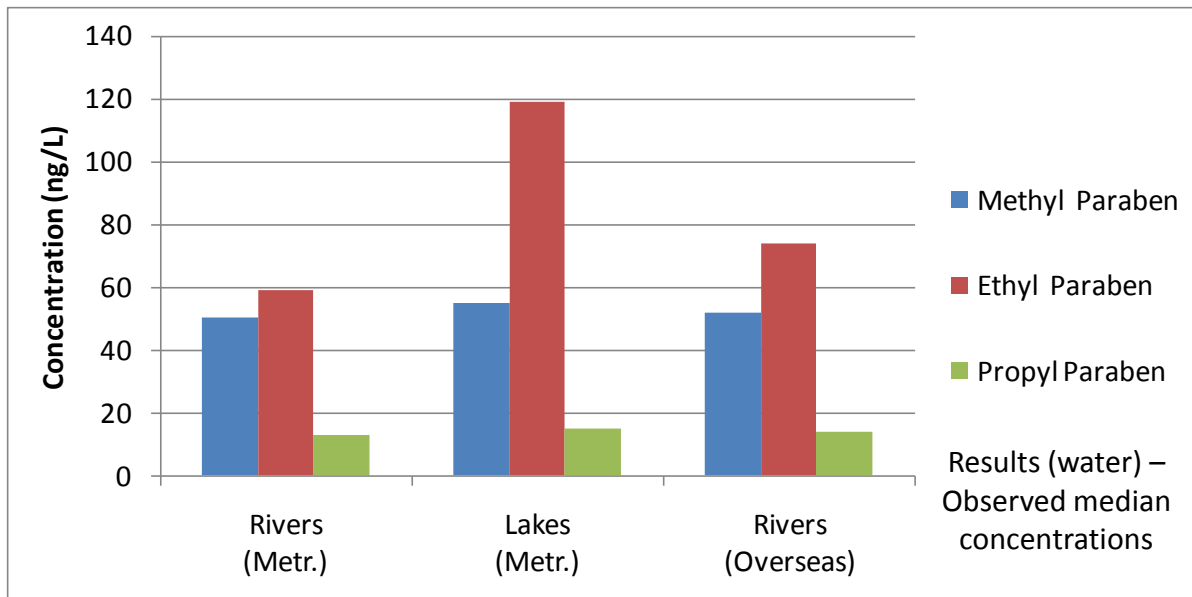
**Impact of the field
operator**



*Present study to assess the impact
of personal care products (e.g.
parabens) used by the field
operator*

The case of parabens

The 2012 national screening study in France displayed high paraben concentrations and almost 100 % frequency of quantification (FQ) (~400 samples) (Botta & Dulio, 2014).



FQ: > 99% all parabens

Conc. levels :
Et P > MeP >> PrP

Median conc. rivers:

- MeP 51 ng/L
- Et P 59 ng/L
- PrP 13 ng/L



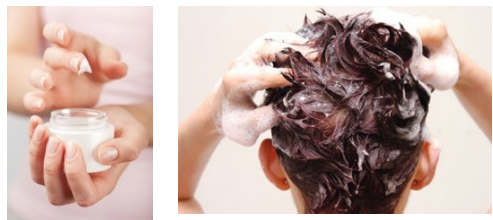
Are we sure that measured parabens concentrations in water correspond to the real environmental concentrations?

Objectives of the study

- Understand the influence of the sampling material (e.g. bottles not well washed) and of the sampling methods / equipment on the possible contamination of the sample
- Characterise the influence of the field operator on the contamination of the sample
- Provide recommendations for best practices

Methodology

- **1st campaign** : 3 samplers (women) with their routine cosmetics application



Parabens ?

- **2nd campaign** : 5 samplers (women & men) who used parabens-containing cosmetics for 5 days before the sampling



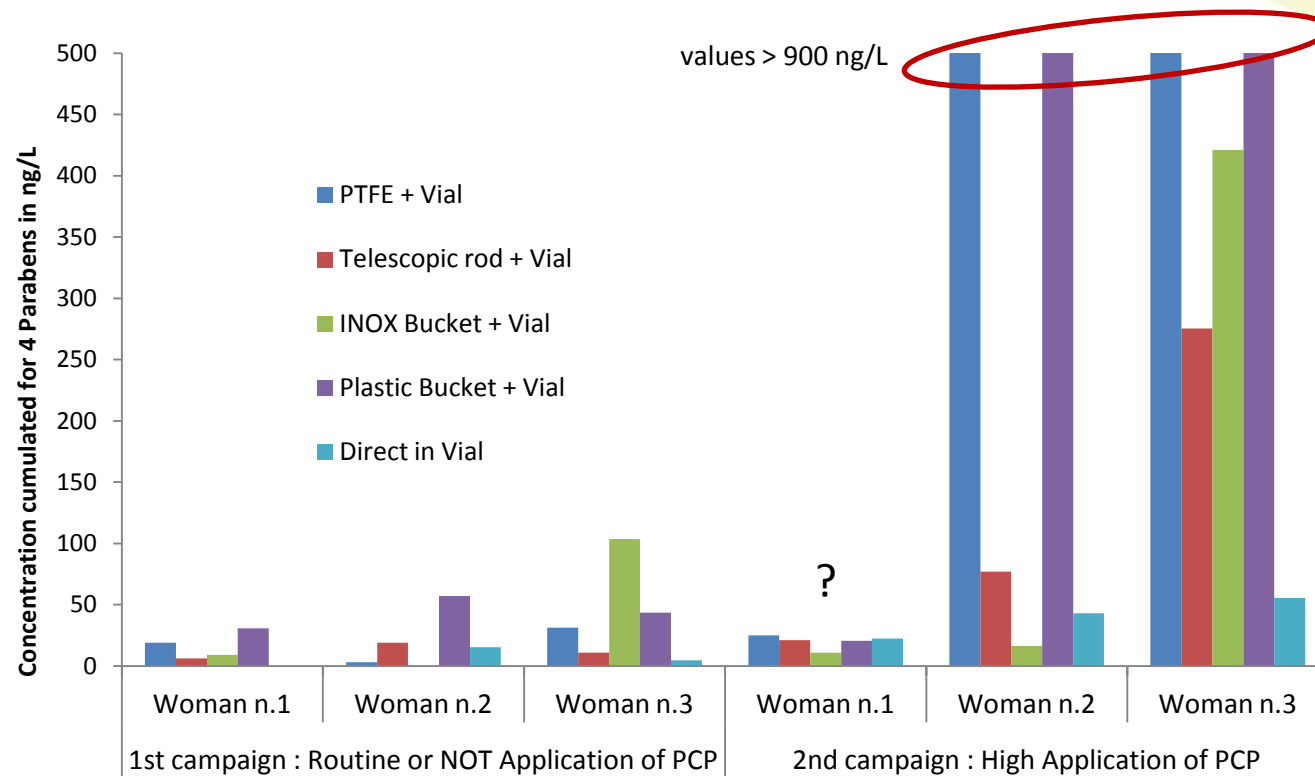
6 products ALL with parabens

5 different sampling methods applied on a reference site :

- Direct sampling in the river
- Use of a plastic bucket
- Use of an inox bucket
- Use of a PTFE bucket
- Use of a telescopic rod & vial

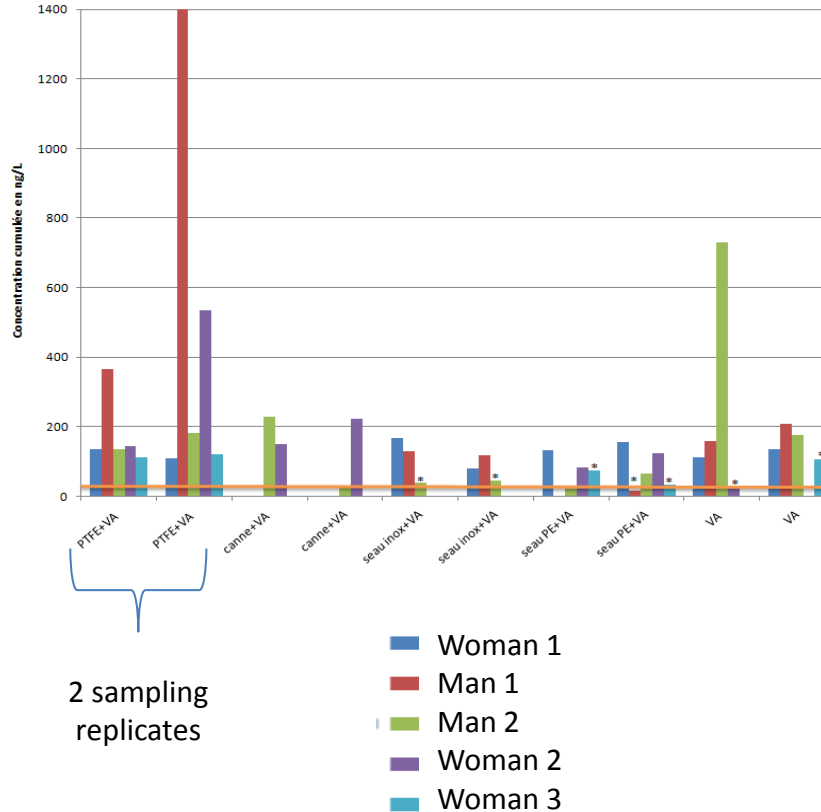


Results & conclusions

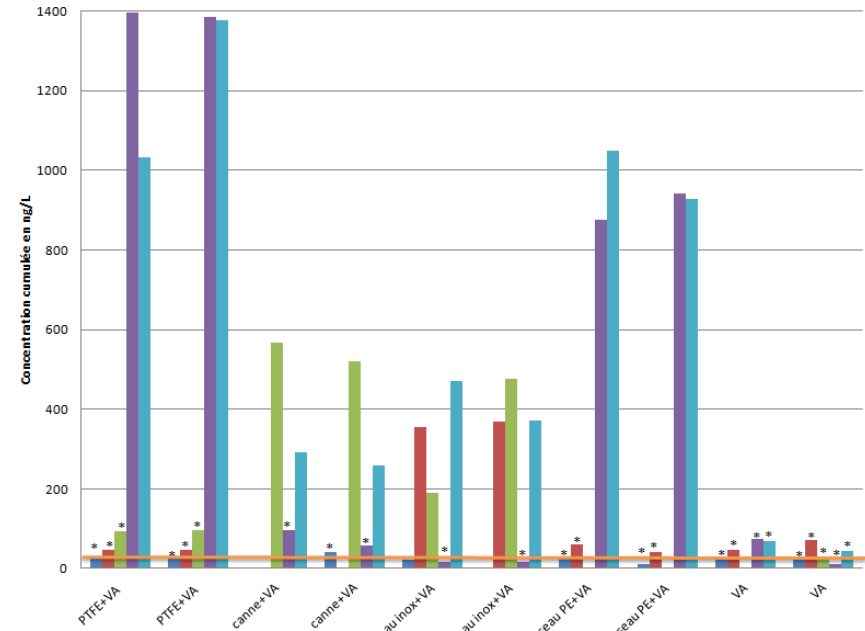


- *Doubt on the results of Woman n.1 -> a problem occurred -> analyses delayed of 10 days -> possible degradation of Methylparaben*
- Evidence of higher contamination after application of PCP (containing parabens)
- Direct sampling in vial seems to reduce sample contamination by the field operator

Results & conclusions (2nd campaign)



Gloves used

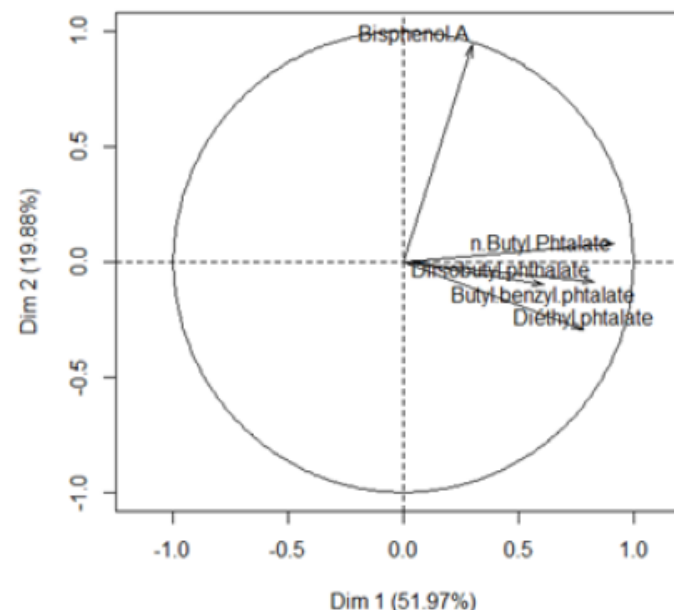
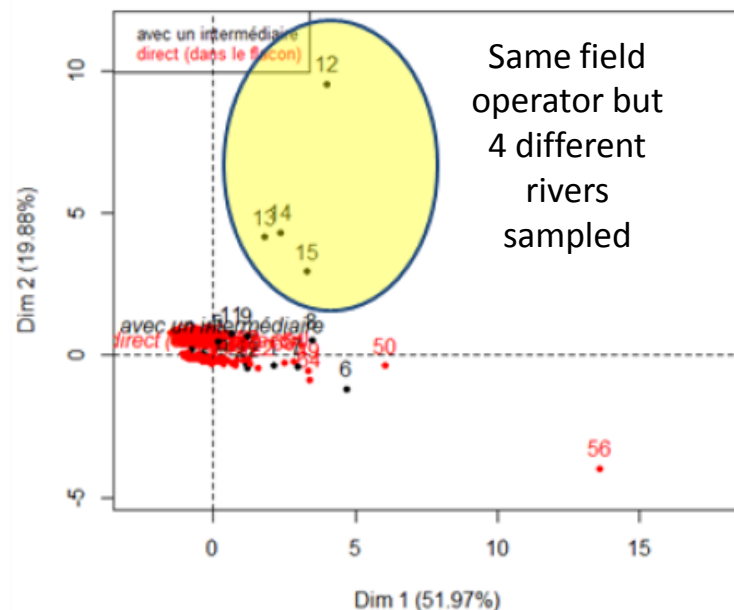


Gloves NOT used

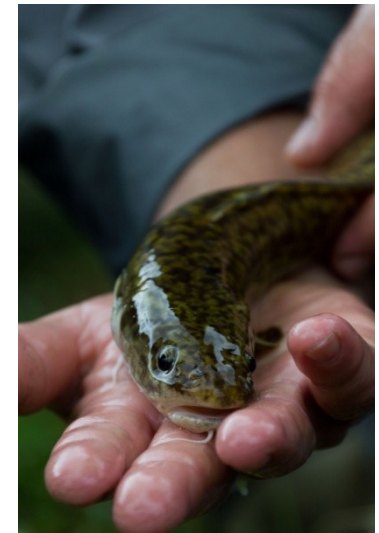
- Use of gloves reduces the risk of sample contamination (except for 3 cases)
- Man n.1 seems to release paraben during the first sampling
- Concentration higher in samples collected by women (see no. 2 and 3) as compared to men

Perspectives

- A study is planned for 2016 on Bisphenol A, Bisphenol F & Bisphenol S



- Possible study to be performed on a substance included in the EU Watch List : the UV screen 2-Ethylhexyl 4-methoxycinnamate
- Other AQUAREF studies are planned in 2017 on parabens to confirm these preliminary results. Other substances will be investigated, such as musks, triclosan (?)



<http://www.aquaref.fr/>

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