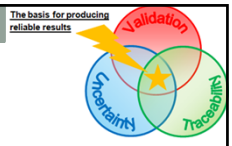
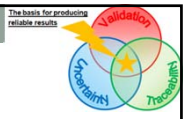


VALIDATION
TRACEABILITY
MEASUREMENT UNCERTAINTY
CHALLENGES FOR THE 21ST CENTURY'S ANALYSTS

Workshop group 2.5:

The relation between trueness (traceability) and any bias component in estimation of Measurement Uncertainty

Convener: Bertil Magnusson
Rapporteur: (… same as convener)



Workshop group 2.5 – participants:

- Dürrstein, Steffen (D)
- Hanna-Brown, Melissa (UK)
- Korol, Waldemar (PL)
- Luong, Thi Mai Hoa (D)
- Naujalis, Evaldas (LT)
- Pires do Rego, Eliane Cristina (BR)
- Vercruysse, Isabelle (B)
- Wawra, Elisabeth (UK)

WG 2.5 questions

a. Does your laboratory often identify significant bias in your method performances?
b. How do you deal with any identified bias?
c. How do a decision of correcting measurement for observed analyte recovery effects influence measurement traceability, validation and uncertainty?
d. Does your laboratory include u(bias) in your estimation of Measurement Uncertainty on the results from methods with an identified bias?
e. Does your laboratory take information from participation in a PT scheme (e.g. a continuous scheme with several rounds) to your estimation of measurement uncertainty?
f. What are your "tools" for identifying and bias – and the uncertainty related to it?

Suppl. material(s):

- Examples based on the principles described in the NORDTEST Report TR 537, "*Handbook for calculation of Measurment Uncertainty in environmental laboratories*"
- An extract from the report Ch. 5 "*Method and laboratory bias – u(bias)*" + App. 4)

a) Does your laboratory often identify significant bias in your method performances?

- Yes, in many cases in the validaiton
- Also several examples from constant low z-scores in PT rounds

b) How do you deal with any identified bias?

- We have to think about the reason why we have a bias
- To look whether it is significant and consistent,
- Try to eliminate bias
- From spiking experiments – inlcude a correction factor if know why – e-g low extration effeciency
- Some assecors want the lab to expand the uncertainty due to the results of the validation

b) …cont.

- Ex calcium in babyfood – low recovery probably does not come from losses during digestion. Proposal to investigate further observed low recovery
- Poland: Vit E, 80 % z-scores were below 0; recalculation of results by recovery factor;
- General comment: PT is not really ”reference material” but a good indication of possible bias
- Ammonium example in Nordtest: 2% was included

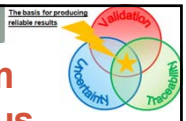
c) How do a decision of correcting measurement for observed analyte recovery effects influence measurement traceability, validation and uncertainty?

- If you correct; for example 10% by using ref material if you do bias corrections it affects your traceability

d) Does your laboratory include u(bias) in your estimation of Measurement Uncertainty on the results from methods with an identified bias?

- Combination of both in pharma
- Pesticide analysis - calculation of sd of recovery as standard uncertainty

- General comment
  - Never introduce a factor if you are not sure from where it comes; you don ‘t know which method is correct



e) Does your laboratory take information from participation in a PT scheme (e.g. a continuous scheme with several rounds) to your estimation of measurement uncertainty?

- Some labs use it – Nordtest guide

- Some
  - …but it was not so common