

Metrological comparability of analytical results in the area of food safety

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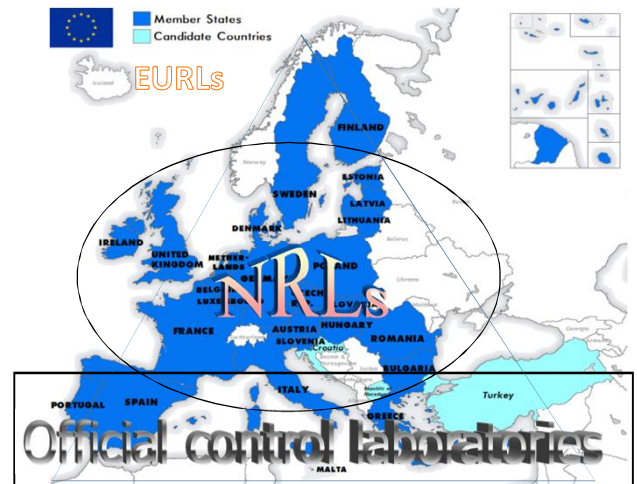
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Metrological traceability of analytical results

- meaning: results are linked to a common reference
- essential to ensure harmonised implementation of legislation and agreed standards across the world
- particularly relevant for the testing of food

The EU Network of Reference Laboratories:

A system of EU and National Reference Laboratories (EURL, NRL) with the duty, among others, to “where appropriate, organise comparative tests between the laboratories” (Regulation (EC) No 882/2004) at the respective level of influence (NRLs or national official control laboratories).



Assessment of comparability of measurement results for lead in milk

The same material was distributed to both the Network of NRLs by the EURL-CEFAO and, subsequently, to the Italian official control laboratories (IT OCLs) by the Italian NRL. Assigned Values for the lead mass fraction are compared, obtained by (ISO 13528):



- comparison with the CRM BCR® 063R “Skimmed milk powder”
- consensus of expert laboratories (the NRLs), using algorithm A
- consensus among the Italian participants, using algorithm A

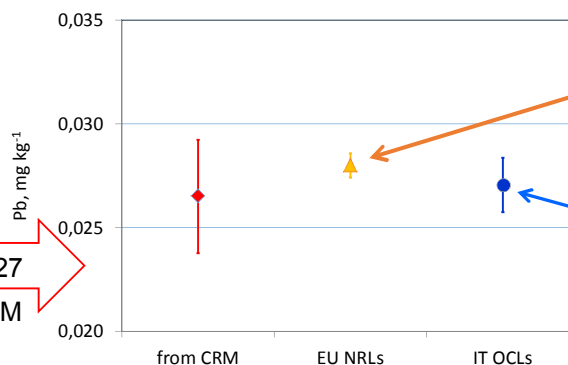


Certified value
 $0,0185 \pm 0,0027$

$0,0265 \pm 0,0027$

Transferred value from CRM

Assigned values and standard uncertainties



Conclusions

Evidence of the metrological capability of both NRLs and Italian OCLs for the determination of the mass fraction of lead in milk is provided through the link to an established common reference. For arsenic and cadmium, also included in this PT, the same comparison could not be carried since no CRM is available.

In fact, CRMs for the mass fractions of heavy metals in foods are scarce and often only a small number of laboratories is involved in comparative tests. Thus, the approach of linking the analytical performances of OCLs to assigned values obtained by the NRLs' Network supports a high quality and uniformity of analytical results within the EU as requested by the Regulation (EC) No 882/2004.