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Comparability of PT Schemes: What have we learned from COEPT?

**5TH EURACHEM/EQALM/CITAC
WORKSHOP ON PROFICIENCY TESTING**

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Contents



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- The aims of COEPT
- COEPT: Work Programme
- The results from COEPT
 - 1st Intercomparison
 - 2nd Intercomparison
- Conclusions from COEPT - What have we learned?
- Future Work and Ideas
- Summary and Acknowledgements

Aims of COEPT



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- To identify the similarities/differences between operating and evaluation protocols of PT schemes in analytical chemistry
- To promote harmonisation and co-operation between PT providers
- To remove trade barriers: mandated participation in specific PT scheme(s)

COEPT: Work Programme



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- Project Start (January 2003)
- Initial Workshop (April 2003)
- First Intercomparisons (May - September 2003)
- Second Workshop (October 2003)
- Second Intercomparison (March to December 2004)
- Final Project Workshop (February 2005)
- Project Conclusion (July 2005)

COEPT: Sectors Covered



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The following technical sectors were covered in the project:

- Drinking Water
- Milk Powder/Food
- Soil
- Occupational Hygiene

1st Intercomparisons



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- Data sets sent to PT providers in 4 sectors
- Some data sets were “real” and submitted by PT providers, others generated by Work Package leader (NMI) using Monte Carlo approach
- PT providers asked to evaluate the data sets using their normal statistical protocol and submit results, plus statistical protocol
- Initial evaluation by sectoral co-ordinators
- Final evaluation by NMI and IRMM

1st Intercomparisons



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- PT providers asked to:
 - Calculate Assigned Values
 - Calculate Uncertainty of Assigned Values
 - Calculate Assigned Standard Deviation (the denominator in the Z-Score Equation, s)
 - Evaluate the performance of the “participants”

Data Sets distributed



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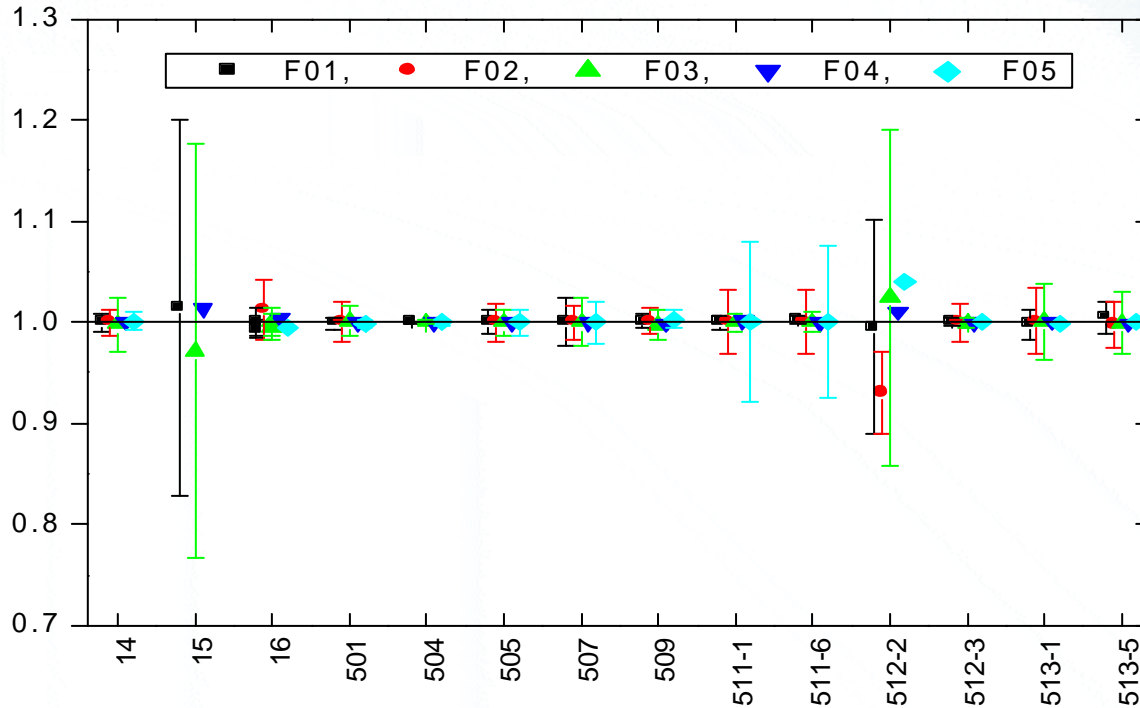
Sector	No of Data Sets	No of PT Providers
Water	24	7
Food	14	5
Soil	29	8
Occupational Hygiene	7 (3 levels per set)	5

1st Intercomparisons: Results

Food sector - means and SDs for all providers



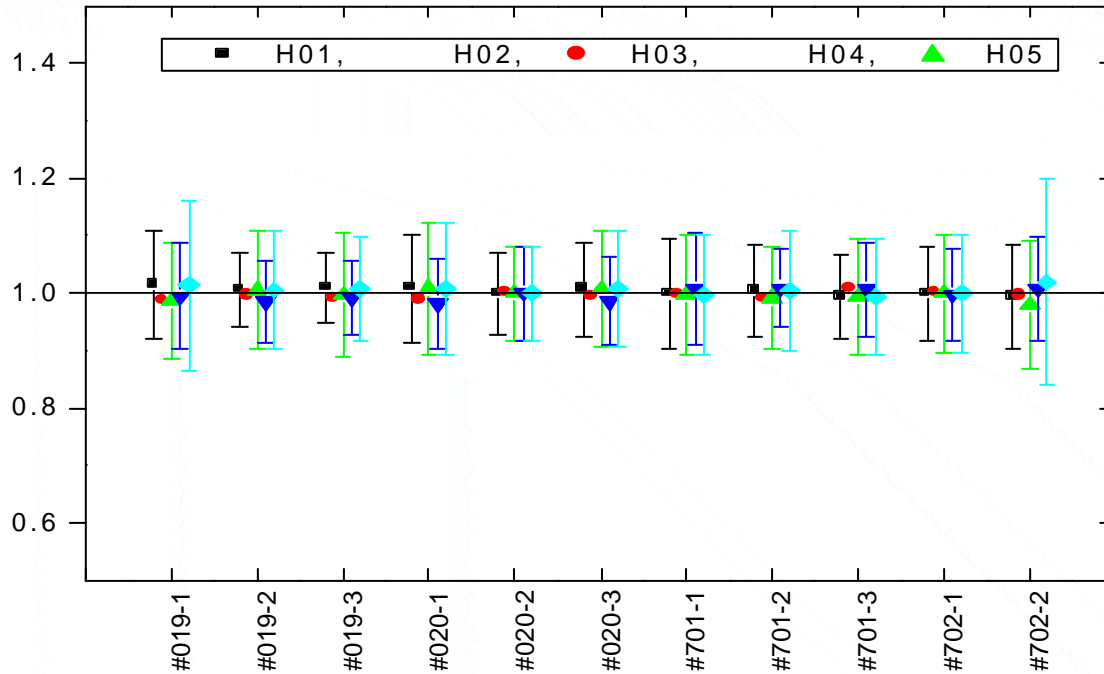
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1st Intercomparisons: Results OH sector - means and SDs for all providers



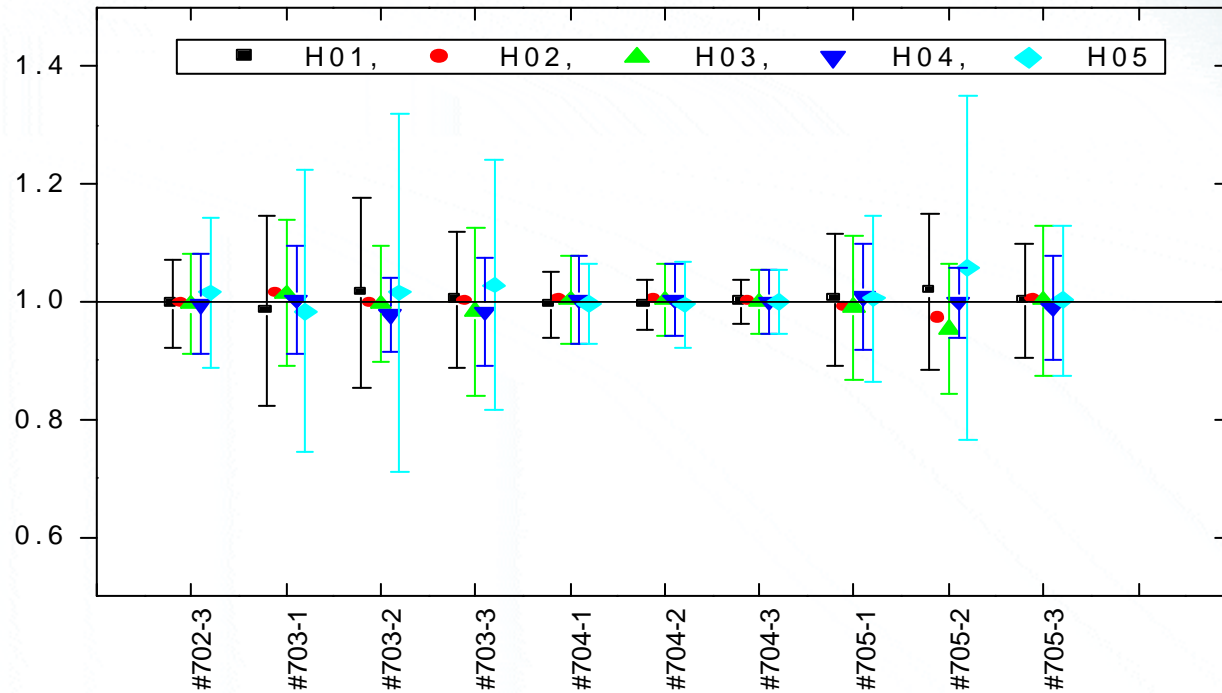
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1st Intercomparisons: Results OH sector - means and SDs for all providers



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1st Intercomparisons: Conclusions



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- Agreement in evaluation of data points (as satisfactory, questionable or unsatisfactory) between providers generally good:
 - 70% (water)
 - 84% (food)
 - 82% (soil)
 - 88% (occupational hygiene)
- In all cases, the differences can be explained by the statistical protocol.

2nd Intercomparisons



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- Real samples (RMs or CRMs) sent to PT providers for distribution to their participants
- Samples to be treated like providers' normal PT samples where possible
- Data to be evaluated as in the providers normal PT:
- Assigned values (and uncertainties), assigned SDs, Evaluations of performance and Reports to be sent to the sectoral co-ordinators

2nd Intercomparisons



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- Changes to protocol notified to sectoral co-ordinators
- Initial evaluation by sectoral co-ordinators
- Final evaluation by NMI and IRMM
- Discussion of results at Final Project Workshop (Ede, February 2005)

2nd Intercomparisons: Results

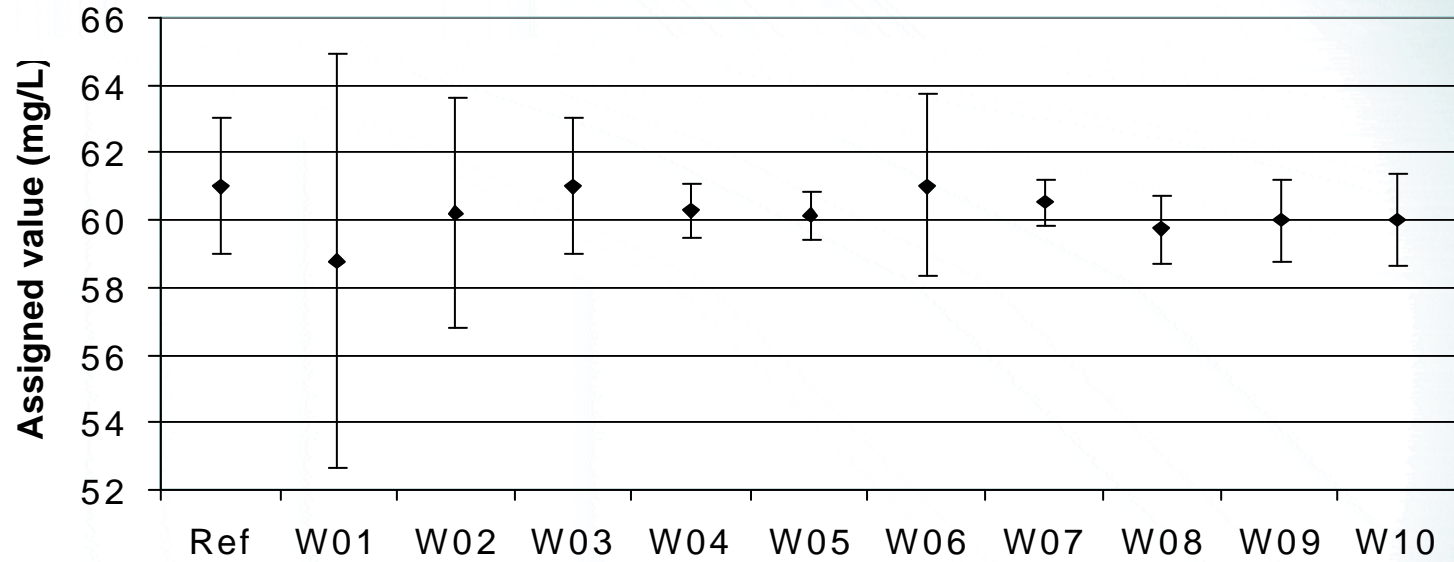
Water Sector - Calcium

Assigned Values and Uncertainties



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Calcium



2nd Intercomparisons: Results

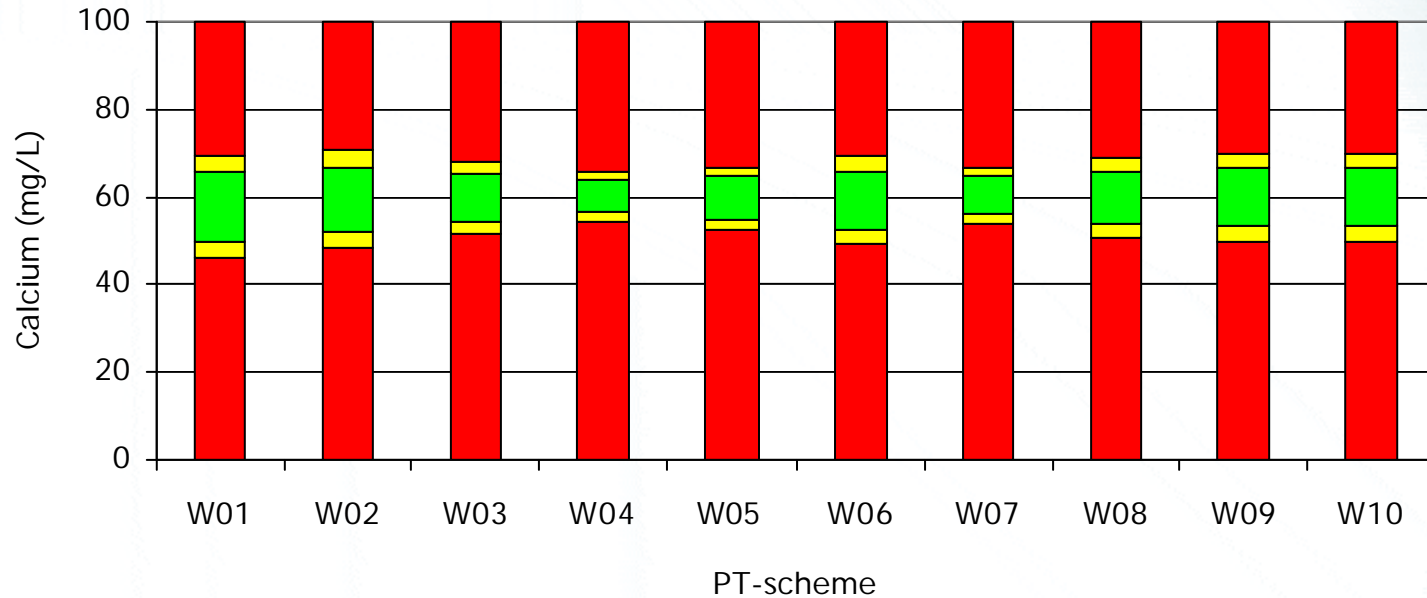
Water Sector - Calcium

Evaluation by ISO 13528



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CoEPT -- ISO 13528 evaluation



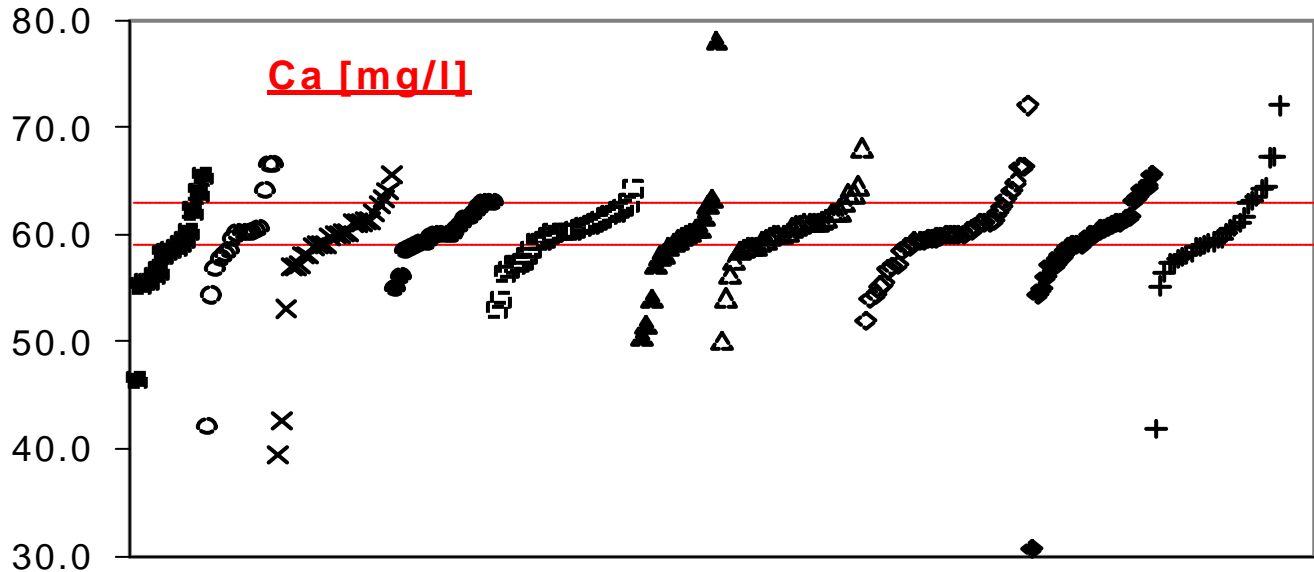
2nd Intercomparisons: Results

Water Sector - Calcium

Distribution of Results



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■	W01	○	W02	×	W03
●	W04	◩	W05	▲	W06
△	W07	◊	W08	◆	W09
+	W10	----- Certified Range			

2nd Intercomparisons: Results Water Sector - Calcium Evaluation of Performance



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