

Explanation Reports -Annual Report-



Annual Report : lay-out and underlying statistics

Explanation of the numbers

This report is made once a year and based on all data submitted during the annual cycle. Outliers (results exceeding the mean +/- 3SD) are removed before the calculations. The first column lists all analytes in the scheme. Column 2 deals with accuracy: you can see your mean outcome in that year in comparison to the mean of all labs. The third column deals with precision. From the four hidden duplicates the CV is calculated according to:

$$CV = \frac{\sqrt{\frac{\sum(\Delta)^2}{n}}}{x \sqrt{2}} \times 100\%$$

CV = Coefficient of Variation

Δ = Difference in the duplicate

n = number of duplicates

x = mean of results

Again the lab's precision is compared with the median CV of other labs (precision of your lab and of all labs, respectively).

Column 4 deals with the linearity. For each laboratory the coefficient of regression r is calculated with the weighed amounts on the x-axis and the submitted results on the y-axis. The lab's r and the median r of all labs are listed.

Column 5 deals with the recovery. Linearity calculation in column 4 also revealed the relation $y = ax + b$ between submitted results (y) and weighed amounts (x). The slope a is multiplied with 100% and is the recovery of weighed amounts. Again recovery of the lab and the median recovery of all labs is encountered.

The last column shows general data of all labs: the number of labs who submitted results (n) and the Interlab CV calculated according to

$$\text{Interlab CV} = \frac{\sqrt{\frac{\sum SD^2}{n}}}{x}$$

CV = Interlab CV in the respective specimens of the cycle

SD = standard deviation

n = number of specimens in a cycle

x = mean of results

The Interlab CV is an indication of the state of the art of harmonisation of results between labs and as such an indication how urgent efforts to achieve better standardisation are needed!

Explanation of the colours

Red Flags

The annual Report is the basis for scoring. Poor Performance for a given analyte and a given parameter (e.g. the “precision for Alanine”) is indicated by a red flag.

Criteria for the red flags:

- Accuracy: your mean value belongs to either the 2½% labs with highest or 2½% lowest values
- Precision: your precision belongs to the 5% labs with the highest CV
- Linearity: your linearity belongs to the 5% labs with lowest regression coefficient (r).
- Recovery: your recovery belongs to the 2.5% labs with lowest or 2.5% labs with the highest recovery

Empty boxes imply that you did not submit results.

N/A in boxes indicates that you did not submit enough results or that you had too many outliers.

To allow calculation: criterion for accuracy, linearity and recovery is at least one result for each of the four sample pairs; criterion for precision is at least one result for one sample-pair.

Green Boxes

A green box for an analyte means that your performance for that analyte is sufficient.

Criterion is that you do not have more than one empty, N/A or red box. Thus three out of four parameters (accuracy, precision, linearity and recovery) should be satisfying (criterion is a result without a red flag) to get a green box.

Annual Report

A comment to the annual report can be downloaded from the bottom of the report.