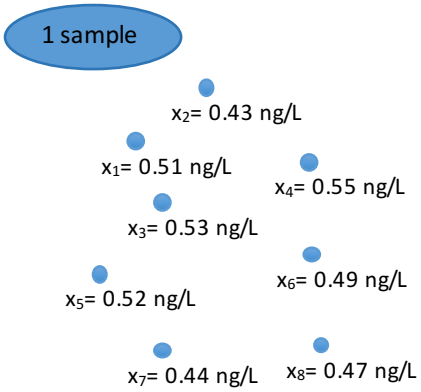
Precision

Repeatability, intermediate precision, reproducibility

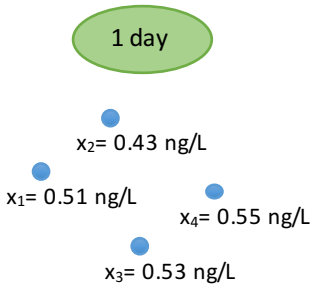
Glyphosate in ground water:



Precision characterizes the closeness of agreement between the measured values.

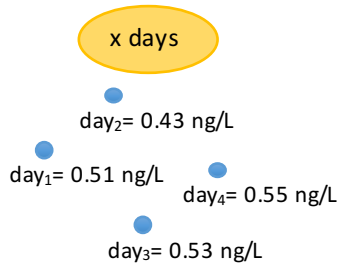
Precision relates to the random error of a measurement system.

Glyphosate in ground water:



Repeatability

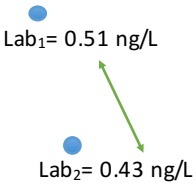
one operator, one experimental setup, one set of reagents



Intermediate precision

different analysts, calibrants, batches of reagents, columns, spray needles

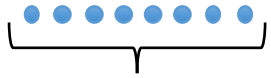
Reproducibility



Precision between measurement results obtained at different laboratories

*Not always needed for single-lab validation **but** important if the method is going to be used in several laboratories*

Glyphosate in ground water:



Standard deviation

Expressed as absolute standard deviation:

$$s = \sqrt{\frac{\sum_{i=1}^{n}(x_i - x_{mean})^2}{n-1}}$$

also as:

Relative standard deviation (RSD)

Variance (s^2)

Coefficient of variance (CV)

$$RSD = \frac{s}{x_{mean}}$$

As a general rule…

$$s_{repeatability} \leq s_{intermediate\ precision}$$

If not:

- Too few replicates
- Too short time interval