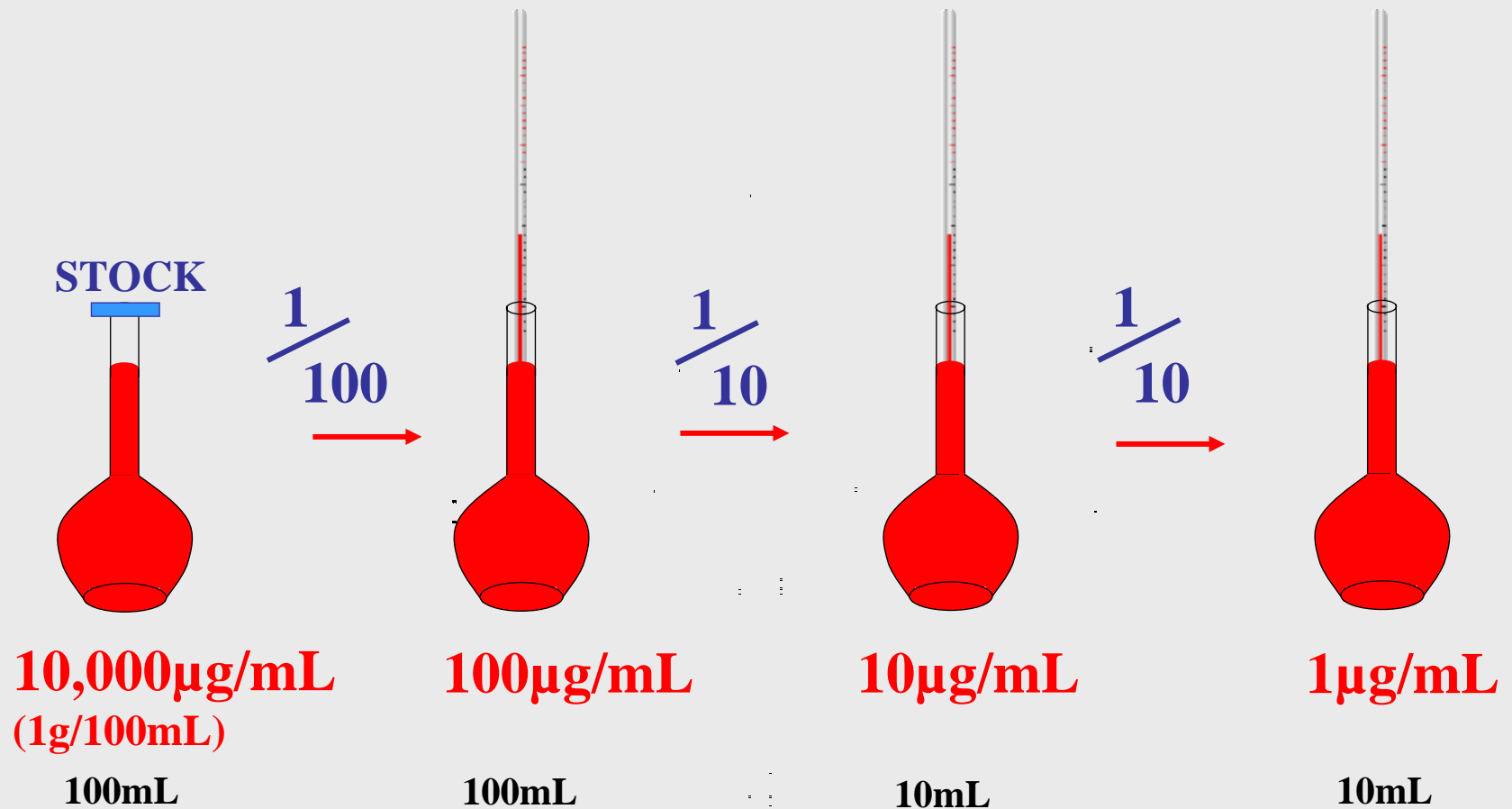


# Pesticides in Fish - let's take this example and work our way through it

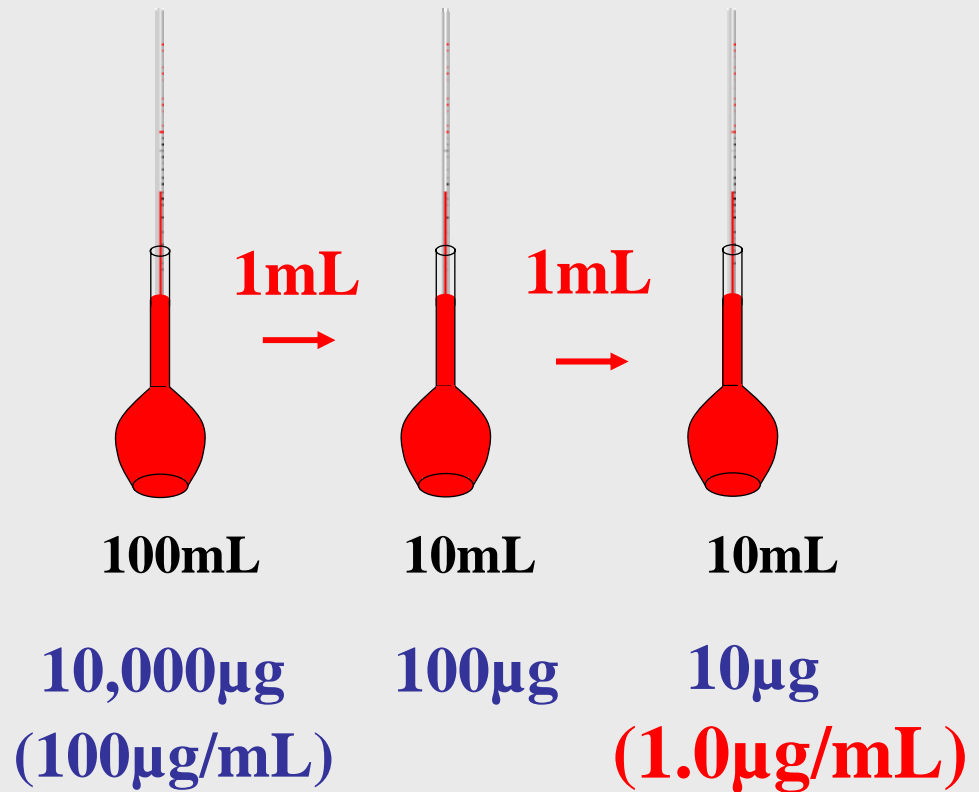
- Are there any pesticides there?
  - If so which ones
  - OR, is the level below a certain value?
  - OR, if they are the there, how much?
- } Qualitative
- } Semi-quantitative
- } Quantitative

# Serial Dilutions



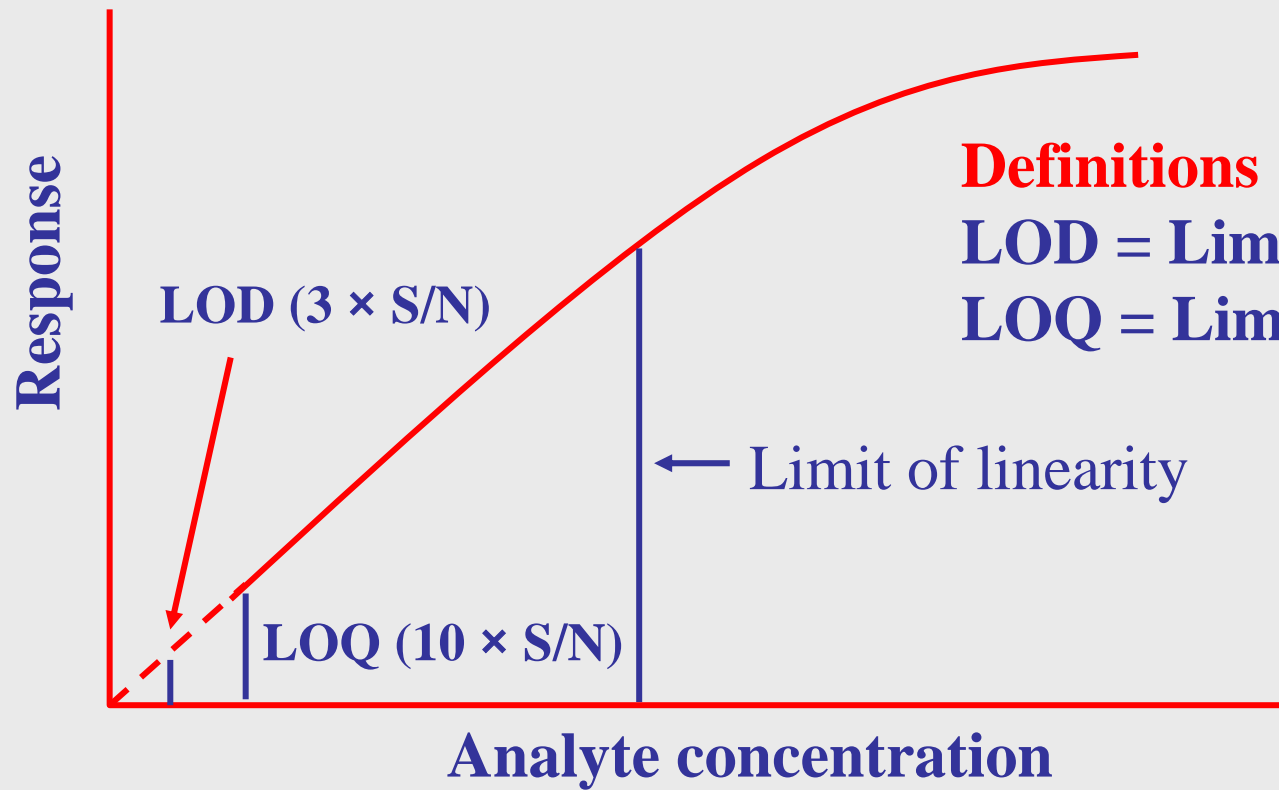
# A better way to do the calculation

- Forget about concentrations until the final step
- Think only in terms of how much mass is in each flask



# Typical calibration curve

Typically, a five point calibration curve is used



## Definitions

**LOD = Limit of Detection**

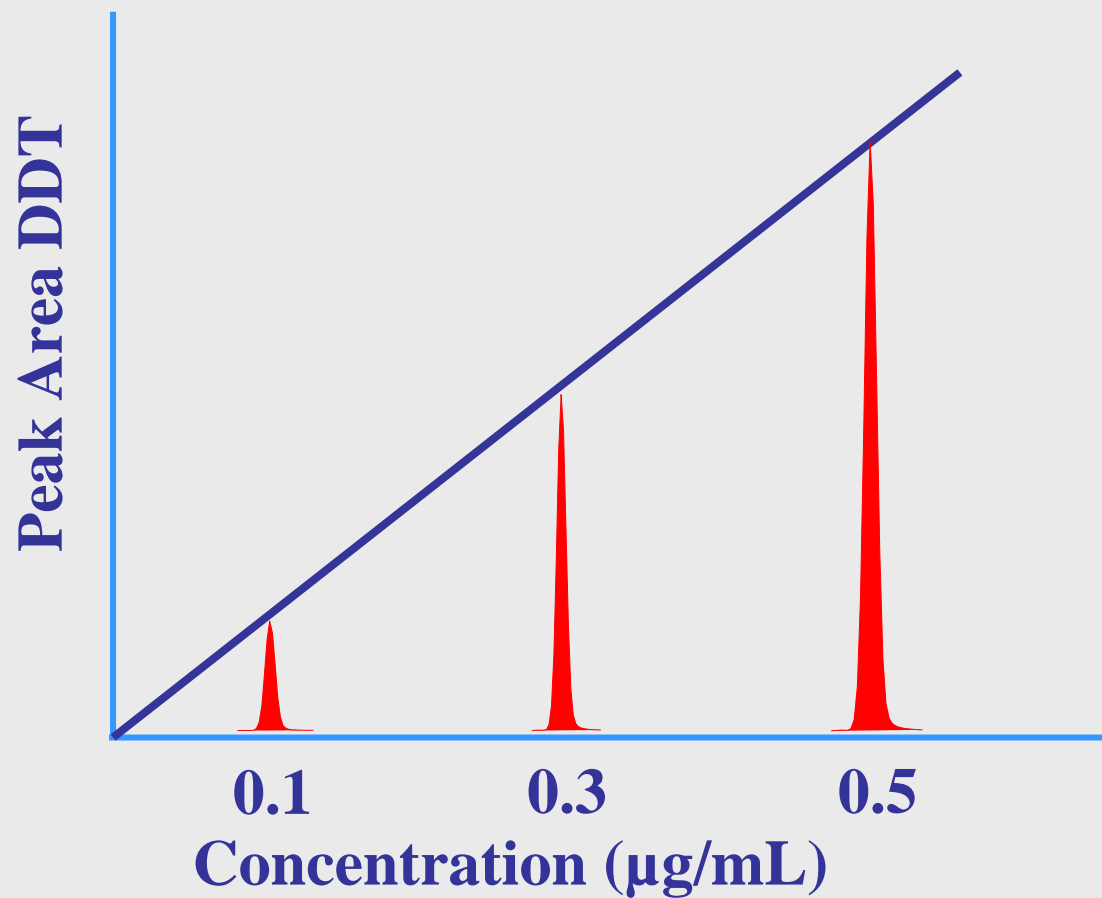
**LOQ = Limit of Quantitation**

# External standard method

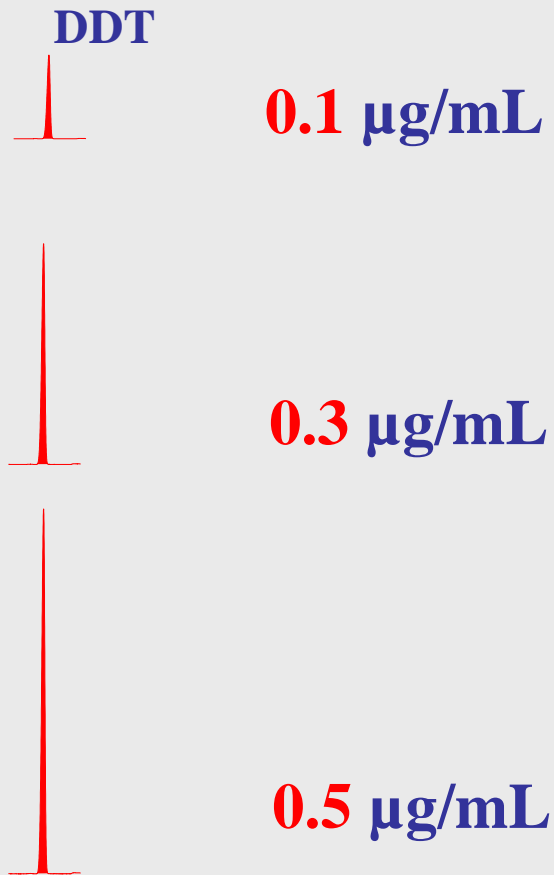
- You either assume that the response is linear over the whole concentration range or you measure it
- This is assuming the same injection volume has been used for both the std and sample

$$\text{Concentration of unknown} = \frac{\text{area (unknown)}}{\text{area std} \times \text{concentration std}}$$

# Three point calibration plot – as an example

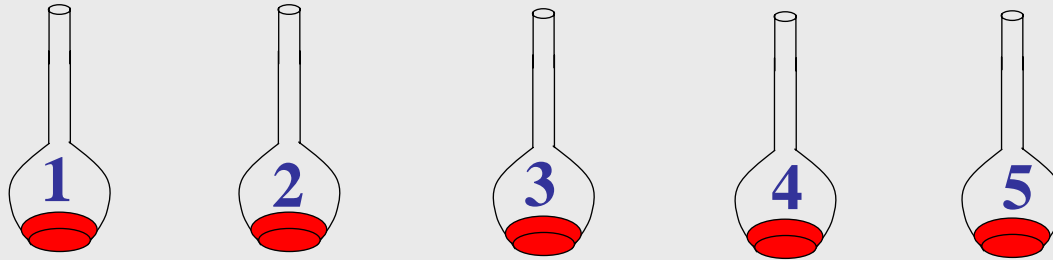


# Measurement of standard peak areas

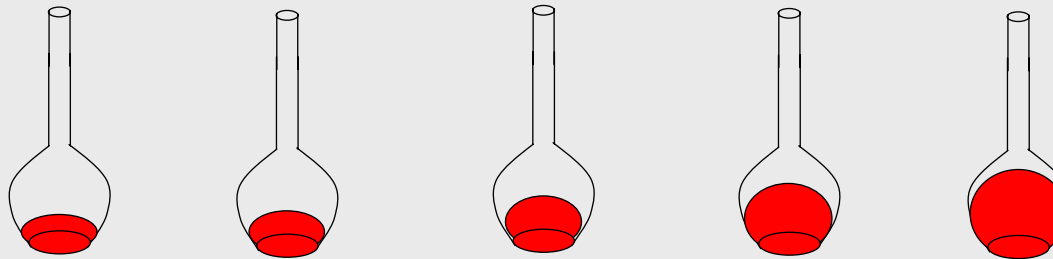


Conc DDT (µg/mL)	DDT peak Area
0.1	150
0.3	480
0.5	738

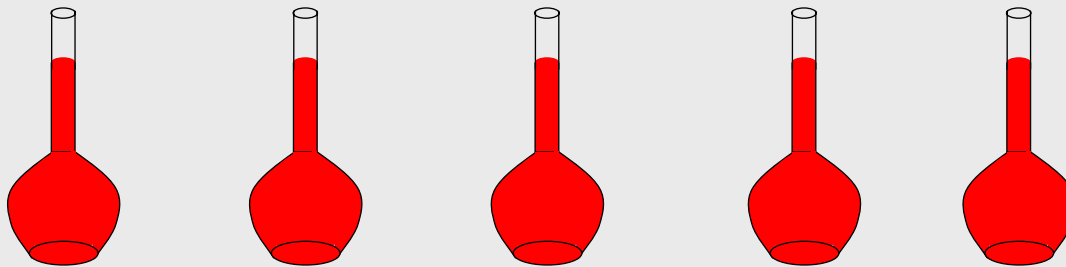
# Preparation of Standard Additions



Add 5mL of fish sample extract to each flask



Add 0, 5, 10, 15 and 20 mL of standard to each flask



Fill each flask to the 50 mL line and mix

# Standard Additions Calibration curve

