



# Proposal of a validation guidance: an objective approach on SANCO 3131<sup>1</sup> for a multi-residues pesticides validation using Decision 2002/657/CE's concepts

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## INTRODUCTION

The importance of laboratory analyses has become essential to guarantee food safety and product quality in market, especially considering competitiveness in international trade. Validation process allows evaluating some performance characteristics demonstrating that the analytical method is fit for purpose and can be considered as an evidence of reliable results.

The goal of this study is to propose a practical and robust guide of validation for a multi-residue analyses, based on international protocols, and using well-established criteria as Decision 2002/657/CE, and Document N° SANCO/2007/3131, besides of statistical concepts.

## RESULTS and DISCUSSION

The validation parameters with the respective criteria of acceptance were determined to assure analysis results, considering some of that are calculated from experiments already carried through:

- ✓ **selectivity:** 6 blank samples
- ✓ **limit of detection of the equipment:** signal/noise = 3 (standard solution)
- ✓ **linearity ( $r^2 \geq 0,980$  and individual residue up to 10-20%):** 5 levels in 6 replicates
- ✓ **repeatability (RSD  $\leq 20\%$  in 2 days):** spike the blank samples in 2 levels (LOQ and LMR) in 6 replicates
- ✓ **reproducibility ( $\leq 32\%$  1 day):** spike the blank samples in 2 levels (LOQ and LMR) in 6 replicates
- ✓ **recovery (70-120%):** use the data obtained in one day of the repeatability assay
- ✓ **accuracy ( $\leq 20\%$ ):** use the data obtained in one day of the repeatability assay
- ✓ **limit of quantification:** the lowest spiked level with recovery between 70-120% and RSD  $\leq 20\%$ .

Each parameter was established based on the analytical methodology and matrix complexity, taking into account the reality of a laboratory. This way, a flowchart was developed according to the international protocols (Figure 1).

## CONCLUSIONS

Therefore, validation and quality control's analysis are essential tools to assure the analytical results and the international trade. In such a way, a practical validation script (step by step in a flowchart) was developed after the evaluation of different international protocols, adjusted to laboratory routine. This approach was applied to analyze 25 different residues among organochlorine pesticides and PCB, providing a robust and quick guideline.

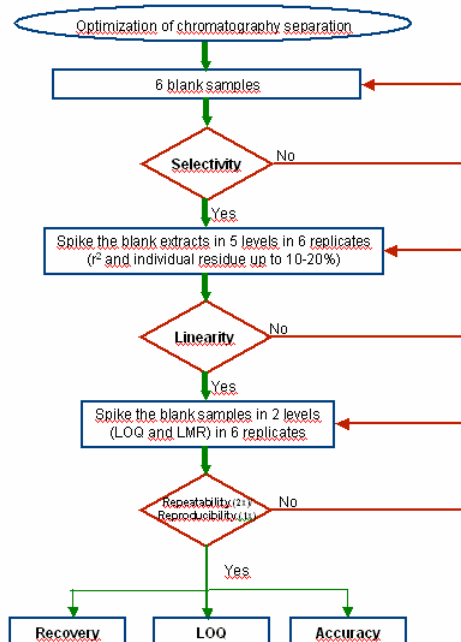


Figure 1: Validation flowchart based in the international protocols.

## REFERENCES

- [1] Document SANCO20073131
- [2] Decision CE/2002/657

