

# Assessment the impact of the analytical methods for pesticide residues quantification in organic products control improvement

Roxana Maria MADJAR, Gina VASILE SCĂEȚEANU,  
Mala-Maria STAVRESCU-BEDIVAN



University of Agronomic Sciences and Veterinary Medicine, Faculty of Agriculture, 59 Mărăști Blvd., Bucharest, Romania

## Abstract

Pesticides are worldwide used in agriculture to increase yield and crop quality, but there are many concerns and disadvantages related to environmental pollution and human health. Lately, demand and consumption of organic food have increased due to the higher content of bioactive compounds and absence of contaminants (heavy metals, pesticides).

Accepted PPP for  
organic agriculture  
(EC 889/2008)

substances of crop or animal origin  
microorganisms used for biological pests and disease control  
substances produced by microorganisms  
substances to be used in traps or dispensers

**NO SYNTHETIC PESTICIDE ARE ACCEPTED IN ORGANIC AGRICULTURE**

environmental conditions

**PESTICIDE CONTAMINATION**  
of organic products

conventional farms from vicinity

insufficient actions for fraud control

**PESTICIDE QUANTIFICATION**  
in organic products

**EXTRACTION**

**SEPARATION**

**CONCENTRATION**

**QUANTIFICATION**

QuEChERS method

GC-MS/MS and LC-MS/MS are used  
for pesticides in organic products

Label **organic** for vegetal products is **not always synonymous with healthy** even if this is consumers' belief regarding organic labeled products.

## Conclusions

According to organic agriculture principles, the resulted food crops must not contain pesticide residues, but according to literature date there are situations when through different analytical techniques, pesticide residues have been identified and quantified.

## References (selection)

1. M.M. Gomez-Ramos, C.Nannou, M.J.Martinez Bueno, A. Goday, M. Murcia-Morales, C. Ferrer, A. Fernandez-Alba, *Pesticide residues evaluation of organic crops. A critical appraisal*, Food Chemistry, X, (2020), 100079. doi: 10.1016/j.fochx.2020.100079.
2. V. Bursić, G. Vuković, M. Cara, M. Kostić, T. Stojanović, A. Petrović, N. Puvaca, D. Marinković, B. Konstantinović, *Plant protection products residues assessment in the organic and conventional agricultural products*, Sustainability, 13, (2021), 1075, <https://doi.org/10.3390/su13031075>.

## Acknowledgements

This work is consistent with research directions and guidelines specified by Ministry of Agriculture and Rural Development in project ADER 1.4.4. *Identification, evaluation, testing, development and validation of analysis methods of nutrients and contaminants from inputs usable in organic agriculture.*