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BOOK OF ABSTRACTS





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MULTI-RESIDUE ANALYSIS METHOD FOR INSECTICIDE RESIDUES USED FOR CONTROL OF THE CACOPSYLLA PYRI (L.) IN PEAR FRUITS

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Cacopsylla pyri (Linnaeus, 1761) is one of the most important pests in pear production in Europe. Insecticides with different modes of action are generally used to control this pest. In pear protection programs, special attention should be paid to the correct choice of dosage and application of insecticides in order to obtain safe final products and also to protect environment. Excessive use of various insecticides could lead to increased content of pesticide residues in fruits. However, the production of high quality, health-safe fruits should represent a major priority for growers. The subject of this research included the validation of the liquid chromatography method with tandem mass spectrometry (LC-MS/MS), for the determination of pesticide residues, and its compliance with MRLs. The analysis of pesticide residues, in pears is challenging due to the presence of matrix effect. In this case the implementation of an effective clean-up method prior to the injection onto chromatographic system is needed. Therefore, the multi-residue and sensitive analytical method for the determination of spirodiclofen, spirotetramat, spinetoram, deltamethrin, diflubenzuron, abamectin and chlorantraniliprole in pears was validated. Sample preparation procedures were based on QuEChERS approach. A liquid chromatography tandem mass spectrometry (LC-MS/MS) method was used for the separation, detection and quantification of pesticide residues. Ionization was performed by positive electrospray ionization (ESI). The mass spectrometer operates in Multiresidue Reaction Monitoring (MRM) mode. A rigorous validation procedure according to SANTE/11312/2021 Document was performed to ensure high quality of analytical measurements. Matrix-matched calibration was used for the pesticide residues quantification with the use of internal standard carbofuran D3. For all investigated pesticides recovery was between 70-120%, with the R2>0.99 and limit of quantification (LOQ) of 0.01 mg/kg. All the detections were below the MRLs, which indicate that the Good Agriculture Practice (GAP) can lead to quality, compliance with MRLs, and sustainability of agricultural products.

Key words: pear fruits, LC-MS/N

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ANALYSIS OF GLYPHOSAT

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References

- https://ec.europa.eu/1
- Commission Impleme dinated multiannual cr



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Key words: pear fruits, LC-MS/MS, pesticide residues

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ANALYSIS OF GLYPHOSATE ON FOOD FROM ANIMAL ORIGIN

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Glyphosate is currently approved in the EU. The approval expires on 15 December 2033. Therefore, glyphosate can be used as an active substance in Plant Protection

It is included in the coordinated multiannual control programme of the Union to ensure compliance with maximum residue levels of pesticides and to assess the consumer exposure to pesticide residues in and on food of plant and animal origin [2].

Based on this regulation, glyphosate should be monitored in food of animal origin, such as poultry fat, bovine fat, cow's milk, bovine liver, chicken eggs and swine fat. For all these food commodities a maximum residue level (MRL) of 0.05 mg/Kg is set [3].

A simple and rapid method has been developed for analysis of glyphosate in food commodities of animal origin. The method combines an effective extraction, with occasionally specific clean-up steps depending on the matrix.

Guidance concerning 'Analytical quality control and validation procedures for pesticide residues analysis in food and feed' is included in the SANTE 11312/2021 v2 [4]. Following European legislation, results of the analysis of foodstuff must be released under ISO/IEC 17025 accreditation. The current method has been validated and ac-

In the present work, the method developed in the Laboratory of Public Health Agency of Barcelona for the determination of glyphosate in food from animal origin will be shown.

References

- https://ec.europa.eu/food/plant/pesticides/glyphosate_en
- Commission Implementing Regulation (EU) 2023/731 of 3 April 2023 concerning a coordinated multiannual control programme of the Union for 2024, 2025 and 2026 to ensure

