

NEW LC-MS APPROACHES TO OVERCOME ANALYTICAL DIFFICULTIES DERIVING FROM THE APPLICATION OF EU PESTICIDE REGULATIONS FOR FRUITS AND VEGETABLES

Amadeo R. Fernández-Alba^{1*}, María del Mar Gómez-Ramos², Ana Lozano³, Łukasz Rajski⁴

^{1,2,3,4} European Reference Laboratory for Pesticides in Fruits and Vegetables (EURL-FV). University of Almeria, SPAIN

*Corresponding author - E-mail: amadeo@ual.es , Phone: +34950015034

The effectiveness of the EU enforcement and risk assessment application under Regulations (EC) No: 396/2005, 882/2004, 7882/2012 etc. rely to a large degree on the adequate performance of the food control laboratories. A number of conflict issues between Regulations and their application in routine laboratories have been highlighted based in our experience as European Reference Laboratory. Some of these have been satisfactorily solved but others remained as being important analytical challenges. This presentation is focused in those analytical issues that remain as important laboratory challenges and the importance in using new mass spectrometry instrumentation to overcoming them. The utmost of these conflicts have been selected: • Difficulties arising from complex or “difficult” matrices that typically cause serious problems in qualitative and quantitative analysis. • Limitations in the analytical scope. Commonly as a consequence of workflow limitations to introduce a large number of compounds full validated in multiresidue methods. • Other relevant issues commented will be difficulties deriving from the application of complex residue definitions, degradation processes etc. Selected and illustrative practical cases learnt from the 15 European Proficiency Tests performed during the last years are presented. From them a number of examples of the capabilities of update LC-MS approaches to solve the presented difficulties are also evaluated.

Keywords: *Pesticide, Regulations, LC-MS, Proficiency Tests*

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