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MS-Wine Day

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Behavior of pesticides residues contained in oenological matrices and stored in plastic containers

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After a comment by an Accredia's inspector [1] who supported that the material of the analytical samples are contained could alter, in some measure, the amount of pesticides the inspector was interested to know if containers (bottle, jar, etc) in plastic material (food matrix) finalized to the pesticides analysis.

We decided to investigate if some widely used plastic containers are able to modify the amount of pesticides present in samples at trace level, through adsorption phenomena. For this purpose, samples (water, wine, grape puree) spiked with a mix of pesticides at different polarity were stored for 7 days in fridge inside the following containers: 50 mL vials in Polypropylene (PP), 250 mL vials in Polyethylene (PE), 0.5 L bottles in polyethylene terephthalate (PET), 2 L plastic bags in PE for food use, and glass jars.

The analysis of pesticides was carried out by using a LC-MSMS system (Waters corporation, Milford USA) using the QuEChERS approach (UNI EN 15662 Method).

The results show that plastic containers have high affinity for lipophilic molecules and that the results are also highly bonded to the physical state of the sample.

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