

“Seasonal surveillance of pesticide residues and preliminary dietary risk assessment in commonly consumed F&V in Uruguay”

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Fruits and vegetables are essential foods for a balanced diet. They have the particularity that they are mostly consumed as such, without further processing. Therefore, the concentration of residues from the application of phytosanitary products for crop protection must be controlled.

On average, Uruguay consumes less than half of the F&V recommended by the WHO. For that reason, a consumption incentive program called "Smart Basket or Smart List" has been developed in the last few years.

In this work, seasonal monitoring of fruits and vegetables is being carried out to know the positive findings in the different matrices, their concentrations, and their relationship regarding the maximum residue limits. The monitoring results since the summer of 2020 for matrices such as onion, tomato, citrus, apple, pumpkin, carrot, eggplant, and grapes are presented.

Each analytical methodology for the selected F&V was validated using a QuEChERS AOAC 2007.01 scheme, working with the *Codex Alimentarius* groups and contrasting the figures of merit required by the current SANTE document to ensure the quality of the results obtained. The method was adjusted for the GC-MS/MS determination of approximately 80 analytes, depending on the matrix under study.

For most of the matrices studied, at least one pesticide residue was found within the method's scope, belonging to the technological package used for each matrix. In turn, almost all the concentrations for the cases studied were below the Codex MRL values.

Regarding the identities of the findings, 22 compounds were the most detected, mainly insecticides and fungicides.

The generation of empirical data will allow us to refine the calculations presented in previous communications and go from working with theoretical concentrations or Maximum Limits to distributions of total concentrations. This work aims to obtain a phased or gradual approach to an intake risk assessment and a global overview of the compliance of the Codex MRLs with the findings for the Uruguayan situation.