

## **Pesticides in water sources from the East of Santiago del Estero, Argentina**

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Occurrence of pesticides in water, specially when it comes to drinking water, is a topic of great concern for local communities of agricultural areas. Therefore, the aim of this study was to monitor the presence of pesticides in water samples from different sources and to determine if the values found represent a risk for the population that consumes it. Samplings took place between April 2014 and July 2016 and were carried out in times when sprays are normally made in the crops of the areas surrounding the cities of Sachayoj and Bandera, in the province of Santiago del Estero. Samples belonged to groundwater, surface water and tanks in which the rainwater is collected. 48 compounds, between pesticides and secondary metabolites, were analyzed by ultra high resolution liquid chromatography (UHPLC) combined with an MS / MS detector. Preliminary results indicate that almost half of the active substances were absent or had a very low occurrence (<15%). Those with higher frequency but below 50% generally had a significant number of cases below the limit of quantification. Finally, the molecules of higher prevalence correspond to the most commonly used pesticides, and they are mainly herbicides. For example, atrazina was present in 100% of the samples, and glyphosate appeared in 80% of the samples, with a frequency similar to its secondary metabolite, AMPA. These three molecules were also the ones that showed the highest concentrations. In all cases the measured values are below the limits of the EPA and WHO, but when compared with the limits established by the EU, although only 7% of the data obtained for the individual molecules exceeds the limit of 0.1  $\mu\text{g L}^{-1}$ , adding all the molecules for each site and sampling date 87% exceeds the limit of 0.5  $\mu\text{g L}^{-1}$ .