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**Search for new biomarkers of exposure or effect of phytosanitary products by an ecotoxicogenomic approach: study from field to the consumer's fork.**

Available tools to assess the ecotoxicological impact of pesticides represent an important issue. Exploratory research using an ecotoxicogenomic approach allows the development of alternative analytical methodologies based on "omics" technologies. It is therefore no longer a question of quantifying residues of phytosanitary products but of measuring the level of exposure on sentinel organisms from various compartments of the environment.

From databanks of metabolic responses obtained from case-control study under supervised conditions we will search for volatolomic signatures indicative of exposure or effect to insecticides. The project follows the results obtained by Hidalgo et al, (2018) and proposes to complete and analyze all the data from a biological continuum represented by biological models or sentinel species (microorganisms, insects, vertebrates).

The project combines a non-targeted analytical approach (metabolome deviation) and a post-genomic approach targeted on the tspo gene present in all living taxa.

Finally, it is a question of determining the interest of functional markers sensitive to pesticides and when address to pyrethroid insecticides, it’s a question of building a panspecific image of their ecotoxicity.

Key words : pesticides, (eco)toxicogenomic, biomarkers, volatil organic compounds, gene expression, mass spectrometry.

**Hidalgo, et al. (2018)**. Volatolomics in bacterial ecotoxicology, a novel method for detecting signatures of pesticide exposure? Frontiers In Microbiology, 9, 3113