Multi-approach determination of metal based pesticides in food

Fact Sheet

Project information

MET-PEST

Grant agreement ID: 753053

Project website

Start date 1 October 2017

End date 30 September 2019

Funded under: H2020-EU.1.3.2.

Overall budget: € 185 076

EU contribution € 185 076

Coordinated by: AGENCE NATIONALE DE LA SECURITE SANITAIRE DE L ALIMENTATION DE L ENVIRONNEMENT ET DU TRAVAIL

France

Objective

The industrial and agricultural activities of the modern society lead to significant release of a large number of toxic substances into the environment having an ultimate impact on the food quality and human health. Many of such chemicals are used in agriculture as pesticides, fungicides, etc. to enhance the productivity. This is the case of dithiocarbamates (DTC) that are one of the relatively large used fungicides being effective against a broad spectrum of fungi and plant diseases. Despite the significant environmental and food chain impact of DTC, the current analytical approaches for their determination suffer from serious drawbacks. The European reference method for this purpose relies on non-selective quantification by indirect determination of the sum of DTC species hence this approach provides incomplete information on the exposure to individual DTC. The present proposal aims at the development and validation of a method for accurate and selective determination of DTCs in food by a multi-approach strategy. A combination of analytical methodologies such as those currently employed for trace metals speciation and also for organic contaminants will be developed and fully validated. These methodologies will be critically compared through the analysis of real-life food samples from EU and imported from external markets. The impact of different cooking modes on DTC degradation pathways will also be investigated. By combining powerful separation techniques such as high performance liquid chromatography with elemental and molecular spectrometry, this project will allow obtaining a deeper knowledge on the presence of individual DTCs in
various foodstuff and of their degradation mechanisms during food processing. Additionally, it will consistently contribute to the development of a reference method for selective DTC determination in food hence having a great impact on the scientific research in food quality control at European level.

Field of Science

/agricultural sciences/agriculture, forestry, and fisheries
/agricultural sciences/agriculture, forestry, and fisheries/agriculture
/natural sciences/biological sciences/microbiology/mycology
/social sciences/economics and business/economics/production economics/productivity
/social sciences/economics and business/business and management/commerce
/natural sciences/chemical sciences/inorganic chemistry/metals
/natural sciences/biological sciences/microbiology/mycology/ethnomycology

Programme(s)

H2020-EU.1.3.2. - Nurturing excellence by means of cross-border and cross-sector mobility

Topic(s)

MSCA-IF-2016 - Individual Fellowships

Call for proposal

H2020-MSCA-IF-2016

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Funding Scheme

MSCA-IF-EF-ST - Standard EF

Coordinator
AGENCE NATIONALE DE LA SECURITE SANITAIRE DE L'ALIMENTATION DE L'ENVIRONNEMENT ET DU TRAVAIL

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Activity type
Research Organisations

EU Contribution
€ 185 076

Website
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