EU-China-Safe 1st e-Newsletter, May 2019

Delivering an Effective, Resilient and Sustainable EU-China Food Safety Partnership

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www.euchinasafe.eu

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Welcome to the 1st edition of the EU-China-Safe e-Newsletter.

EU-China-Safe is four years EU funded project that aims to mobilise resources in Europe and China to develop a cohesive partnership that will deliver a shared vision for food safety and authenticity and work towards "mutual recognition".

Comprising 15 participants from the EU and 18 from China, EU-China-Safe contains key research organisations, government and industry needed to develop and jointly implement major advances in improving food safety and combating food fraud in the two trading blocks.

The aim of this newsletter is to provide you with a brief summary of the project and update you on some of the progress and project activities. We hope you find the newsletter useful.

Please contact us at euchinasafe@euchinasafe.eu with any suggestions for improvement.

EU-China-Safe IN A NUTSHELL:

Key facts:
Horizon 2020 Project
Type of action: RIA

Acronym:
EU-China-Safe

Website:
www.euchinasafe.eu

Duration:
48 months
September 2017 – August 2021

Co-ordinators:
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Strategic objective of EU-China-Safe is:

To develop and implement a shared vision of best practice within the EU and China that will enhance food safety, deter food fraud, restore consumer trust, deliver mutual recognition of data and standards and support the flow of agri-food trade between the two trading blocks to promote economic growth.

EU-China-Safe will build the core components needed for a joint EU-China food safety control system comprising: control management, food legislation, food inspection, food control laboratories, and food safety and quality information, education and communication.

The project will develop an EU-China Joint Laboratory Network that will achieve and demonstrate equivalency of results, and will develop a state of the art virtual laboratory, with interchangeable staff from two continents, that will be used as a "showcase" to communicate and demonstrate best practice. Innovative traceability tools will strengthen the most vulnerable supply chains. New or improved detection capabilities for chemical/microbiological hazards and food fraud will be implemented in a harmonised way across the EU-China network. Trade barriers caused by food safety and fraud issues will be analysed and recommendations of how to predict and prevent future events disseminated.

The project will focus on the most commonly reported foods linked to chemical and microbiological contamination and fraud (infant formula, processed meat, fruits, vegetables, wine, honey, spices).

Substantial knowledge transfer and training actions will build high-level and long-term collaboration, synergies and trust between a wide range of EU and China actors.

These advances, in addition to a wider range of confidence building measures towards food safety, authenticity and transparency, will address consumer expectations and facilitate an expansion of EU- China trade.

PROJECT RESULTS:

Data harmonisation and visualisation

EU-China-Safe aims at i) developing a Data Management Plan (DMP) aimed at overseeing and facilitating data extraction from various sources, and data generation in EU-China-Safe; ii) designing and maintaining an internal database suitable for storing the data generated in the project; iii) collecting, harmonizing when necessary, and collating data needed in research activities, and establishing common references for data from different sources and with different granularity, so that datasets can be linked together; iv) selecting and documenting data collection/storage methods and procedures, and where applicable also data analysis methods; and v) connecting EU-China-Safe to relevant data repositories where the generated data can be made available after the project end, in particular the H2020 Open Research Data Pilot.

Data Management Plan has been developed aimed at overseeing and facilitating data extraction from various sources, and data generation in EU-China-Safe.

The DMP catalogues the datasets used- or expected to be used over the course of the project. The DMP was updated as per the Open Research Data Initiative guidelines, and subsequent updates are planned for each reporting period.

Implementation of innovations in food traceability

EU-China-Safe aims at exploring various traceability techniques and technologies of several products moving between Europe and China. The main challenge related to food product traceability is that there is not necessarily a connection between the actual properties of a food product and the claims made in the traceability system. The final outcomes will be a digitised, DNA-based traceability system using blockchain to provide trustable data, a suite of traceability management and collaboration tools designed to support open and transparent sharing of information between supply chain members on both the EU and China sides aiming to prevent a major food safety crisis, and the development of alerting tools to identify inconsistencies in data recorded in traceability systems.

Digitised DNA technology system for traceability using pigs as a case study essentially complete. All pigs tracked from parent DNA through to delivery from EU into China.
Development of prototype alert system demostrating pro-active traceability alerting tool already active. Work is beginning to assess an effective testing strategy based on already recorded data as well as the best methods to visualise and notify on the occurrence of alerts.
Information sharing portal/WiKi for evaluation of data quality for wine chains developed and published to assist with data coordination. Data sources in both EU and China identified and data collection has already begun via multiple means including comprehensive interviews with a variety of subject experts.

Implementation of innovations in food authenticity

EU-China-Safe aims at developing, transferring knowledge and implementing innovative research methods and processes for combating food fraud. Methodologies for detection of food fraud developed both in the EU and China will be transferred both ways, from the EU to China, and from China to the EU. The methodology will focus on five product groups that are all very susceptible to fraud, i.e. wine, dairy products (infant formula), processed meat, organic fruit and vegetables, and spices. Methodologies are based on the latest technologies and include state-of-the-art laboratory-based confirmatory methods. Handheld, portable machine vision based approaches for on-site screening will be trialled. In most cases the Standard Operating Procedures (SOPs) of the existing methodologies will be exchanged and the methods will be implemented in the laboratories of the other partners.

Good progress has been made with the **implementation of state-of-the-art laboratory-based confirmatory methods and novel, portable on-site screening methods.**

For **wine**, the method questionnaire, availability matrix, knowledge transfer activity and sampling have been completed successfully. Chinese partner will establish all assigned methods in time and might serve as multiplicator and trainer to other Chinese laboratories. For **dairy products**, the LC-MS method development for protein contents is still ongoing and great progress has been made. SOPs and patents are being drafted for the different methods, while Chinese partner is working on proceeding with the GB standards for major whey and lactoferrin, respectively.

For **processed meats**, a confirmatory LC-MS methodology for the detection of water-retaining additives, and a spectroscopic screening method (using the SupNIR-1520 portable near-infrared spectrometer) for the adulteration of processed meat products have been developed and promising results have been obtained. For **spices**, the methodology for spice authentication (protocols for analysis of dyes in paprika powders generated by WU) has been exchanged with the Chinese partner (BJCDC). The method setup for the on-site/portable/handheld authentication of spices has been completed at WU (using the Specim IQ hyperspectral imaging camera) and QUB (using the SCiO molecular sensor). In-house and industry partner validation, and the analysis of results is still ongoing. For **fruits and vegetables**, methodology for detection of occurrence of pesticide metabolites developed to help in food regulators' efforts to crack down on illegal practices in organic farming.

Implementation of innovations in food safety

EU-China-Safe aims at i) addressing current challenges and gaps in microbiological and chemical food safety testing through the implementation of new or improved analytical methods; ii) transferring analytical methodology and harmonise testing between China and the EU; iii) improving the safety and quality of food consumed in Chinese and European markets; and iv) improving the food safety infrastructure in both China and the EU.

Good progress has been made on the **establishment of more efficient chemical methods and advances sequencing methods for certain pathogens**. One the major achievements to date was the **establishment of a method chlorate residues in Chinese laboratories** in April 2018. **A new LC-MS/MS method has been developed for the measurement of nitrofuran residues in meat,** which includes a number of new nitrofuran residues that are not including in current monitoring programmes. This new nitrofuran methodology uses a rapid microwave assisted derivatisation protocol and a rapid QuEChERS preparation protocol that will reduce turnaround times for domestic and imported food samples.

FERA has developed a **training programme for food contact materials**, which will be delivered from 2020. UCD have made significant progress on the **development of whole genome sequencing (WGS) protocols for pathogens** and have been working very closely with Chinese partners. **A rapid enzymatic inhibition method is being adapted for the rapid analysis of pesticides in horticulture crops** by AZTI. Contacts were made between VSCHT and Chinese Scientists on the **multi-class methods for the analysis of pesticides using LC-MS.**

Confidence building and trade facilitation

EU-China-Safe aims at building confidence in EU-China trade by improved understanding of consumer practices and regulatory frameworks, the latter by developing and demonstrating mutual recognition of laboratory standards and results. A virtual laboratory (RL2020) will be established to showcase new best practice, ensure harmonisation of laboratory procedures and to build confidence and mutual recognition of results. There will be a strong focus on exchanging best practices between the EU and China and will ensure that there is a full understanding of food safety and authenticity requirements to support compliance of exporting companies with both the EU and Chinese requirements, in support of enhancing bilateral trade of food/agri-food commodities. Emphasis will be placed on reaching consistent laboratory testing regimes as well as food safety standards underpinned by a robust risk assessment, with the aim of bolstering consumer confidence in both jurisdictions.

The virtual laboratory RL2020 will be the first time that practical laboratory analysis has been conducted in this shared and cooperative approach between two distinct global regions and laboratory networks. The cooperation and feasibility is already established and has potential to reduce costs and improve time in terms of laboratory response in future food safety incidents.

In addition to establishing the feasibility for technical aspects, groundwork has also been done to engage with key industry stakeholders and government organisations (EU and China) in relation to two commodities which face impediments in food trade between the EU and the China (stemming from different food safety standards). Methodology for the economic analysis of case studies has been established, and work has started to evaluate the incidents chosen using both a model that is widely used within Europe and one that is widely used within China has been proposed. This will be the first time such a comparison has been made and the results have the potential to create a major impact.

Dissemination, exploitation and training

EU-China-Safe aims at transferring knowledge, together with training, that is the key instrument for reinforcing cooperation and increasing the level of collaboration as well as enhancing synergy between the EU and China in food safety area. It will support the working synergies to be found between on-going EC projects and will maximise impact delivery in terms of improving safety of food supply and increasing consumer confidence in imported/exported agri-food products.

- **EU-China-Safe represented at a range of importnant scientific events: Belfast Summit on Global Food Integrity** (ASSET 2018, 29-31 May 2018, Belfast, UK), **International Forum on Food Safety and Health 2018** (19-20 April 2018, Beijing, China), **12th China International Food Safety & Quality Conference** (CIFSQC, 7-8 November 2018, Shanghai, China), **8th International Symposium on Recent Advances in Food Analysis** (RAFA 2017, 7-10 November 2017, Prague, Czech Republic)
- **Series of peer reviewed scientific papers published**

Networking with other two EU H2020 projects established, MultiCoop (www.multicoop.eu) and Authent-Net (www.authent-net.eu)

Training program for consortium members, external scientists and stakeholders under preparation: Call for participation in the EU-China-Safe Training program planned in September 2019

Do you want to receive information about EU-China-Safe (activities, newsletters, organised events...)?

Please **Sign up for stakeholders database** here.

Dates for diary:

EU-China-Safe will be represented at events:

9th International Symposium on Recent Advances in Food Analysis (RAFA 2019)

5-8 November 2019, Prague, Czech Republic

China International Food Safety & Quality Conference (CIFSQC)

30-31 October 2019, Beijing, China

We hope you have found this e-Newsletter interesting and informative. We would welcome your views on any of the issues covered. Please email at euchinasafe@euchinasafe.eu. Please feel free to distribute this EU-China-Safe e-Newsletter to other interested parties.

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