EU-China-Safe 2nd e-Newsletter, February 2020

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 2nd 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.

Chris Elliott and Yongning Wu,
EU-China-Safe coordinators

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:
prof. Christopher Elliott, QUB, Belfast, UK &
prof. Yongning Wu, CFSA, Beijing, China

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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.

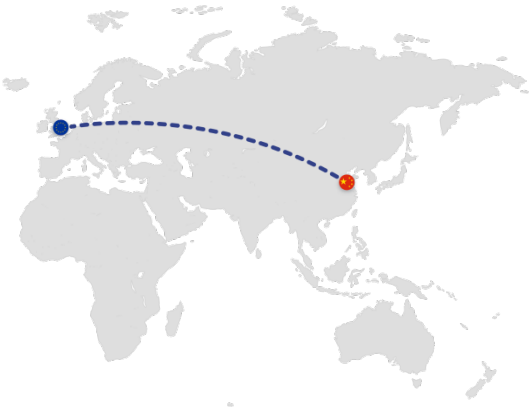
These advances, in addition to a wider range of confidence building measures towards food safety, authenticity and transparency, will address consumer expectations and facilitate an expansion of EU- China trade.

EU-China-Safe PROGRESS:

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 in both the EU and China, aiming to prevent a major food safety crisis, and alerting tools to identify inconsistencies in data recorded in traceability systems will be developed.

Demonstration of a traceability example of pork moving from Cranswick farms to China, was completed with DNA analysis, and EU-China-Safe is looking at key areas to expand the solution to make it ready for commercial markets.



The work in Development of risk-based traceability management tools, as well as the expansion of the arc-net platform in Pro-active Traceability Alerting tools, bringing alerting and warning systems to the existing traceability solution, is nearing completion. This brings opportunities to predict supply chain issues before they occur and identify them in real time as they do. By adopting these complete solutions into the food production industry, we can offer secure, trustable, and transparent traceability leading to increased safety and confidence in the EU-China supply chain.

Mapping the local-global wine supply chain from Europe to China enabled identification and highlighted points of weakness. Various actors and stakeholders have been interviewed and both social and economic perspectives have been studied to reveal trends and figures of the wine market in China and Europe.

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 which 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 technology and include state-of-the-art laboratory-based confirmatory methods. Handheld, portable machine vision based methods for on-site screening will be trialled. In most cases the Standard Operating Procedures (SOPs) of the existing methodology will be exchanged and the methods implemented in the laboratories of the other partners.

The methodologies, developed both in the EU and China from previous research and established practices, for the detection of food fraud, are being transferred and implemented both ways, from the EU to China, and from China to the EU. Authentication methods involve wine, infant formula, processed meats, organic produce, and spices. The method exchange and validation with industry partners have also been performed for some of the product groups.

The analytical outcomes of the spot check performed on the integrity of European wines on the Chinese market showed agreement of results between partners and high levels of proficiency for the chosen methods.

Furthermore, the wine results also point to a variety of applied fraudulent practices among the tested samples, highlighting wine as a product at a high risk of fraud. Seven methods were established for the detection of adulterants in infant formula, together with the completion of the first draft of the Chinese GB standard for the *Determination of Lactoalbumin in Infant Formula Foods and Milk Powder.* Methods for the detection of water retaining substances, carrageenan and glucomannan in meat, and for the screening of adulteration, show good potential for the fight against meat fraud. Portable light spectroscopy applications (SCiO and Specim IQ instruments) can be used as screening tools for pepper provided that the spectral database is expanded to develop more robust models which incorporate more (internal and external) product variation.

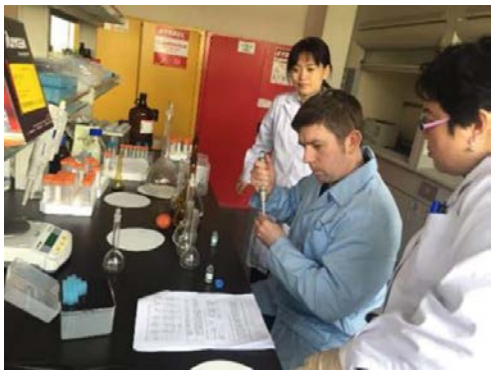
Implementation of innovations in food safety

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.

Establishment of efficient analytical metodologies for food safety control is progressing well.

Multi-analyte UHPLC-HRMS method was developed and validated for screening of 425 analytes covering the classes of pesticides, mycotoxins and plant toxins in fruit, spices and teas. The method uses a rapid QuEChERS-like sample preparation, which allows the processing of large numbers of samples in a single day. Method transfer at Chinese laboratories is ongoing.

Another approach focused on development of a multianalyte enzyme inhibition screening method for pesticides residues showing high affinity towards 13 active substances.



A new high throughput method was established for the determination chlorate and perchlorate residues in milk and milk powders using LC-MS/MS and transferred from the EU to laboratories in China. The results of validation showed that the method is simple, rapid and highly sensitive, and suitable for the determination of these residues in dairy samples. A Chinese National standard using this method is currently drafting.

The rapid LC-MS/MS methodology for the analysis of eight bound nitrofurans residues using a microwave-assisted derivatisation step and a modified QuEChERS-based sample extraction has been validated at EU partner laboratories, following the synthesis of new commercially available isotopically labelled standards.

Sample preparation and LC-MS/MS detection methods were also established for 13 antiviral drugs in meat.

Standardized operating protocols were developed for the whole genome sequencing (WGS) of three selected food-borne pathogens and transferred to Chinese collaborators.

Training content covering agreed topics on Food Contact Materials, which will be shared with the Chinese partners, has been also prepared.

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 robust risk assessment, with the aim of bolstering consumer confidence in both jurisdictions.

Within the virtual lab, RL2020, details of methods and regulations that are used for food control have been exchanged. Two instument vendors are collaborating in the EU and China. Validation studies for the analysis of dioxins in food using GC-MS/MS are underway, reference materials and proficiency test samples have been exchanged and analysed demonstrating good instrument performance.

Communication needs, expectations, perceived barriers and facilitators to building trust and confidence, and on consumer views have been analysed both within Europe and in China. An analysis of food trade impediments between the EU and China identified two commodities of interest (peanuts and infant formula milk). A questionnaire has been designed and some key stakeholders interviewed.

The work exploring nearly 3000 EU consumers' perceptions towards purchasing food products made in China (i.e. processed meat products or processed fruit and vegetable products) is going to be published.

Data collection has been completed for the Chinese consumer survey to explore preceptions towards purchasing one of two infant milk formulae (domestic or imported) using the theory of planned behaviour. Over 3000 Chinese consumers participated in the survey.

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 the 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 Open Day and **Workshop on "Food Safety in China: Past, Present and Future"** were organised as satellite events of the 9th International Symposium on Recent Advances in Food Analysis (RAFA 2019), held from the 5th to 8th November 2019, in Prague, Czech Republic.

RAFA series is a leading event in recent advances in food analysis, attended in 2019 by 820 delegates from 53 countries. Therefore, RAFA 2019 offered a great floor for showcasing EU-China-Safe activities and networking with all interested scientists, industry representatives, media and other stakeholders.

The aim of the Open Day and Workshop at RAFA 2019 was to provide participants with a demonstration of some of the latest outputs from the project and to let participants know how to get involved with dissemination and training activities.

The audience was exposed to the information on developments and strategies in food traceability, food safety and authenticity control and demonstration of the best practice for a joint EU-China food safety control system, through the slide show, series of posters on progress in the project activities and scientific posters, scientific papers, leaflets and live demonstrations. Apart from scientific oral, poster and demo presentations, EU-China-Safe organised a draw for symposium participants who signed up as a stakeholder. Giorgia Purcaro from the University of Liege was the lucky winner of an EU-China-Safe umbrella.

Look at presentations given at the workshop on "Food Safety in China: Past, Present and Future" HERE.

Look at series of posters demonstrating EU-China-Safe activities HERE.

Watch the video on EU-China-Safe at RAFA 2019 HERE!

- **EU-China-Safe was represented at a range of scientific events,** for example:

  DIOXIN 2019, 25-30 August 2019, Kyoto, Japan

  International Food Fraud Conference, 17-18 September 2019, Vejle, Denmark

  Aquaculture Europe 2019, 7-10 October 2019, Berlin, Germany

  International Akademie Fresenius Conference "Food Authenticity and Food Fraud Prevention", 24-25 October 2019, Frankfurt, Germany

  9th International Symposium on Recent Advances in Food Analysis, 5-8 November 2019, Prague, Czech Republic

Series of new scientific papers published by EU-China-Safe consortium

Look at the list HERE

Networking with European Institute of Innovation & Technology (EIT) Food (**EIT Food**) established.

Massive Online Open Course:

- **Farm to Fork: Sustainable food production in a changing environment**

  About: How does food reach our plates? How is the food industry changing? What threats are there to food supply chains? How can we build a sustainable food industry? Queens University, Belfast in partnership with EIT Food, University of Turin, Analytics Engines and Italian Livestock Breeders Association (AIA) have designed an open online course to answer these questions and explore food and agriculture in the modern world. Over four weeks, learners will learn about the complexity of the global food chain, the vulnerability of the food industry to emerging threats and the solutions to stopping these threats early. Learners will also consider the issues surrounding production of food of animal origin.

COMING SOON:

TRAINING PROGRAM for consortium members, external scientists and stakeholders: Call for participation in the EU-China-Safe Training program is planned at the beginning of March 2020. More information on applications can be found **HERE**.

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

Please **Sign up for stakeholder's database** here.

The Distance Learning Programme will provide a number of study options including at Postgraduate Certificate (PgCert), Postgraduate Diploma (PgDip), and at Masters (MSc) level. In March 2020, 2 modules will commence**, Food Integrity, Fraud and Traceability** and **Global Food Standards and Legislation**. In September 2020 the **Advanced Analytical Tools for Food Safety** will run and in March 2021, the **Global Food Standards and Legislation** will run again. Further information can be found here.

Online courses:

- **Animal Feed Production: Feed Quality and Feed Safety**
  Start date (The Animal Feed Quality): Monday 27th April 2020
  Start date (The Animal Feed Safety Course): Monday 1st June 2020
- **An Introduction to Food Systems**
  Enrolment: Monday 2nd March 2020.
  Note: This course is an invite only course but may be offered to professionals if demanded. Please contact qub.eitfoodeducation@qub.ac.uk for more information.
- **An Introduction to Food Science**
  Start Date: Monday 5th October 2020
- **Digitalisation and technology in the food chain**
  Start Date: Monday 2nd November 2020

EVENTS - Dates for diary:

EU-China-Safe will be represented at event:

FoodIntegrity: Building transparency and trust
18-19 March 2020, Twickenham Stadium, London, UK

EU-China-Safe will be showcased at the interactive workshop: Developing risk communication using social science methods
It is a scenario based interactive workshop which will explore ways of framing and delivering effective risk information to the public, nationally and internationally.

Other events:

18th International Akademie Fresenius Conference "Food Safety and Dietary Risk Assessment"
24-25 March 2020, Wiesbaden, Germany

2nd Food Safety, Traceability and Compliance Forum 2020
25-27 March 2020, Melbourne, Australia

Analytica 2020
31 March-3 April 2020, München, Germany

13th European Pesticide Residue Workshop (EPRW)
11-15 May 2020, Granada, Spain

EuroResidue IX
18-20 May 2020, Egmond, The Netherlands

4th International Conference on Global Food Security
Achieving local and global food security: at what costs?
15-18 June 2020, Montpellier, France

HPLC 2020
20-25 June 2020, San Diego, CA, USA

North American Chemical Residue Workshop (NACRW)
26-29 July 2020, Florida, USA

40th International Symposium on Halogenated Persistent Organic Pollutants (DIOXIN 2020)
30 August- 4 September 2020, Nantes, France

134th AOAC Annual Meeting & Exposition
11-17 September 2020, Orlando, FL, USA

EU-China International Workshop on Food Authenticity and Traceability
October 2020 Beijing, China

34th EFFoST International Conference 2020
Bridging high-tech, food-tech and health: Consumer-oriented innovations
November 2020, Israel

Rapid Methods Europe 2020
2-4 November 2020, Amsterdam, The Netherlands

China International Food Safety & Quality Conference (CIFSQC)
4-5 November 2020, Shanghai, 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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