PROGRESS REPORT (June 2019)

WP4: Implementation of innovations in food safety

BACKGROUND

Differences in licensing, regulations and food testing methods have huge potential to disrupt international trade. A EU-China research programme focussing on meat, dairy products and, fruits and vegetables will be undertaken to address these issues. The strengths of each method will be assessed and modified if necessary for future technology readiness and application.

OBJECTIVES

- To address current challenges and gaps in food safety testing through the implementation of new or improved analytical methods.
- To transfer analytical methodology and harmonise testing between China and the EU.
- To improve the safety and quality of food consumed in Chinese and European markets.
- To improve the food safety infrastructure in both China and the EU.

PROGRESS ACHIEVED SO FAR

- Multi-analyte UHPLC-HRMS method was developed by VSCHT and validated for screening of 425 analytes covering the classes of pesticides (n = 357), mycotoxins (n = 57) and plant toxins (11) 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.
- A new high throughput method was established for the determination chlorate and perchlorate residues in milk and milk powders using LC-MS/MS.
- AZTI has developed a multianalyte enzyme inhibition screening method for pesticides residues showing high affinity towards 13 active substances. Work on the sample preparation protocol is ongoing.
- Methodology was established by Teagasc for measuring six bound nitrofuran residues in meat in 2018. This has been since extended to a total of 8 bound nitrofuran residues and analysis time was reduced using microwave assisted reaction.
- FERA staff have written training content covering agreed topics on Food Contact Materials, which will be shared with CFSA staff.
- Sample preparation and LC-MS/MS detection methods established at Teagasc for 13 antiviral drugs in meat. The test has recently transferred to a more sensitive LC-MS/MS to improve selectivity and sensitivity.
- Standardized operating protocols were developed for whole genome sequencing of three selected food-borne pathogens and transferred to Chinese collaborators.

SUCCESS STORY COMING SOON

- Methodology for the analysis of chlorate and perchlorate residues was transferred to CDC and CFSA laboratories in April 2018. Beijing CDC are currently drafting a Chinese National standard using this method.