THE GLOBAL FOOD ANALYSIS

THE TOOLS FOR A FUTURE PROOF FOOD SYSTEM

FOOD 2030: INNOVATION

The robustness of scientific data is the basis for risk assessment of chemical (toxicological) and microbial contaminants. The rapid expansion of scientific and technological advances could allow faster and more specific methods increasing decision making, while also meeting societal demands for reduced animal testing.

SPECIFIC R&I BREAKTHROUGH TOPICS

Rapid scientific advances allow a new era of food analysis for quality and safety. This is particularly being seen in genomics and epigenetics (the science that deals with the study of genomes and the translation into phenotypes; the expression of genes), and advances in technology, such as analytical equipment (eg spectroscopy), computational toxicology, bioinformatics, and the emergence of big data. This allows the development of:

- Analytical technologies that are rapid, exact, low cost, and non-destructive of samples (eg allergen detectors).
- Methodologies for higher traceability and fraud detection.
- Systems for the identification of potential targets for preservation.
- Better modelling for higher accuracy on the potential shelf-life of products (i.e. increasing food security and reducing food waste).

In addition, it could be aspired to reach societal demand for reducing animal tests in food safety assessments.

EXPECTED IMPACT

The food analysis methodologies applied in Europe are advanced, allowing one of the best food safety and quality systems in the world. Nevertheless, new technologies can launch a new era of rapid, unambiguous, low cost, robust and sustainable food analysis and risk assessment. This can improve the way we process, store,

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transport and consume food, from the traceability of ingredients and rapid detection of allergens, to increasing self-life (reducing food waste) and reducing animal testing in food risk assessment.

MARKET OPPORTUNITIES / CHALLENGES

- Accurate food safety and quality is a must for the development of the UN sustainable development goals and the sustainability of the food system, including food security.
- There is already science and technology available that requires further development and application. Targeted R&I investments and support are needed to achieve the full potential of these new technologies.
- The global differences in the management of food safety and quality is a challenge to overcome. Homogenisation of regulation and availability of resources is needed for a world of international trade.
- Communication of food safety and risk assessment to consumers, social media management, and education is a challenge, but with an opportunity for improvement to gain citizens' trust.

EXAMPLE REFERENCES

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ASSOCIATED TRENDS IN FIT4FOOD2030 (URL)

- Agricultural pollution
- Transboundary pests and diseases
- Destabilised consumer trust
- Social media and food
- Packaging and health
- Responsible research and innovation
- Food regulation

ASSOCIATED CASES IN FIT4FOOD2030 (URL)

- Tellspec
- Foodintegrity
- Mimica Touch
- Viro Vet

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