Detection of NGT products to promote innovation in Europe

DETECTIVE

The project

The European and international food production and distribution systems are interlinked and the need to trace plants and animals and their food products is important for labelling, transparency, and consumer choice. This requires the development of cost-effective, easy-to-use and reliable detection approaches for new genomic techniques (NGTs) -derived plant and animal products.

In this context, DETECTIVE, a collaborative research project supported by Horizon Europe, aims to develop, validate, and implement innovative detection methods for plant and animal of NGTs and their derivative products. Recognising the shortcomings of existing analytical methods for detecting NGTs, DETECTIVE is enhancing its research and development efforts by also exploring alternative, non-technical approaches to identity preservation in the supply chain.

Objectives and scope

The specific objectives of DETECTIVE are:

- To create a common understanding of the traceability, authenticity and transparency needs regarding NGT.
- To develop analytical techniques capable of detecting, identifying and quantifying known and unknown mutations, multiple mutations, and cisgenic events.
- To develop a data space as a cluster of databases covering a multitude of gene-edited and cisgenic organisms, gene sequences, natural and breeding-related variability.
- To analyse the socio-economic and regulatory implications of various technical and non-technical strategies for detection, traceability and authenticity of NGT plant and animal products.
- To empower enforcement authorities, certified laboratories, private laboratories developers and agrifood operators through a co-created empowerment plan with train-the-trainers and capacity building.

In addition to its clear technological and scientific aspirations, DETECTIVE intends to facilitate knowledge sharing among laboratories and other enforcement bodies through the establishment of a Community of Practice.

Activities

The following activities and tasks will be conducted throughout the project:

- **Apply different types of methodologies and models** from the legal, economic and social disciplines to analyse the socio-economic and regulatory implications of NGTs.
- **Take a comprehensive and holistic approach** to match various detection and traceability approaches to actual needs as co-defined by stakeholders.
- **Apply Responsible Research and Innovations (RRI)** principles under its six dimensions (public and stakeholder engagement, open science, science educations, gender issues, ethics, and governance.
- **Test various detection methods** in a comprehensive way for different types of products (known or unknown mutations, multiple mutations or cisgenic events of various sources).
- **Validation of methods will encompass materials developed within the project** as well as those obtained externally. Method selection will be guided by decision support systems (DSS) previously developed in prior projects and refined within DETECTIVE, facilitating an impartial evaluation of their suitability and effectiveness.

DETECTIVE's impacts will be strengthened and magnified through dedicated and customised dissemination, exploitation, and communication efforts throughout the duration of the project.

Consortium

SLU - SVERIGES LANTBRUKSUNIVERSITET	Sweden (Coordinator)
XPRO - XPRO CONSULTING LIMITED	Cyprus
EV-ILVO - EIGEN VERMOGEN VAN HET INSTITUUT VOOR LANDBOUW- EN VISSERIJONDERZOEK	Belgium
ARCADIA - ARCADIA INTERNATIONAL GEIE	Belgium
CRA-W - CENTRE WALLON DE RECHERCHES AGRONOMIQUES	Belgium
AGES - OSTERREICHISCHE AGENTUR FUR GESUNDHEIT UND ERNAHRUNGSSICHERHEIT GMBH	Austria
LGL - BAYERISCHES LANDESAMT FUR GESUNDHEIT UND LEBENSMITTELSICHERHEIT	Germany
NIB - NACIONALNI INSTITUT ZA BIOLOGIJO	Slovenia
IHAR-PIB - INSTYTUT HODOWLI I AKLIMATYZACJI ROSLIN - PANSTWOWY INSTYTUT BADAWCZY	Poland
BVL - BUNDESAMT FUR VERBRAUCHERSCHUTZ UND LEBENSMITTELSICHERHEIT	Germany
INP PAN - INSTYTUT NAUK PRAWNYCH POLSKIEJ AKADEMII NAUK	Poland
WU - WAGENINGEN UNIVERSITY	The Netherlands
Euroseeds	Belgium
EFFAB - EUROPEAN FORUM OF FARM ANIMAL BREEDERS	Belgium
UBT - UNIVERSITAT BAYREUTH	Germany
PROGENUS - PROGENUS SA	Belgium
HFFA - HFFA RESEARCH GMBH	Germany
UNINE - UNIVERSITE DE NEUCHATEL	Switzerland
JRC - JOINT RESEARCH CENTRE EUROPEAN COMMISSION	Belgium
SJTU - SHANGHAI JIAO TONG UNIVERSITY	China

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