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About as

The **National Centre for Food Technology and Safety (CNTA)** is a private non-profit Technology Centre set up in 1981 at the initiative of the agrifood companies in the Ebro valley.

The main aim of CNTA is to contribute to the **development and innovation of the agrifood sector**, offering technical support to **improve its quality and competitiveness.**

The Centre provides **advanced technological services** to companies and organisations requiring external support for conducting technical activities like:

- Research and development
- Quality control
- Food safety
- Training in agrifood-related topics.

Mission, Vision and Values

MISSION

Our mission is to **provide advanced technological services** for the development of the agrifood sector, through quality and innovation under the principle of food safety.

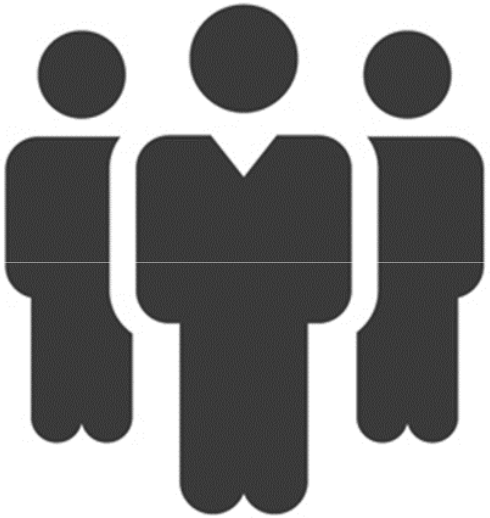
VISION

To be the **leading Technology Center in the agrofood sector** nationwide.

VALUES

- Technological Excellence
- Commited to people
- Result oriented
- Commited to its members
- Ethical commitment
- Anticipation

Collaborative Enviroments



- **Business Environment**
  - Industry associations
  - Manufacturing and processing companies from the agrifood sector
  - Food distribution companies
  - Non-food companies and ancillary industry
- **Scientific and Technological Environment**
  - Universities
  - Research and Technology Organisations
  - Laboratories
- **Public Authorities**

CNTA in ADItech

Agrofood

CNTA ADItech

National Center for Food Technology and Safety
www.cnta.es

Biomedicine

cima ADItech

Center for Applied Medical Research
www.cima.es

NAVARRABIOMED ADItech

Navarrabiomed-Miguel Servet Foundation
www.navarrabiomed.es
Fundación Miguel Servet

Energy

CENER ADItech

National Renewable Energy Centre
www.cener.com

Industry

cemitec ADItech

Multidisciplinary Center for Industrial Technology
www.cemitec.com
Tecnologías para la Industria

ADItech
ADVANCED INNOVATION & TECHNOLOGY CORPORATION
www.aditechcorp.com

Sectors of interest

- Food retailers
- Non-food companies and ancillary industry
- Producers of fresh and minimally-processed fruits and vegetables
- Canned vegetables
- Canned fish
- Producers of frozen foods
- Ready-to-eat dishes
- HORECA sector
- Packaged water
- Juices & soft drinks

- Flours, Confectionery, Bakery
- Sweets, Caramels, Nougats
- Meat sector
- Oils and fats
- Wines, Beers and Spirits
- Vinegars-Spices-Herbs
- Coffee and Infusions
- Dairy products
- Food ingredients and additives
- Feed

MODALITIES OF COLLABORATION

MEMBER (>250)

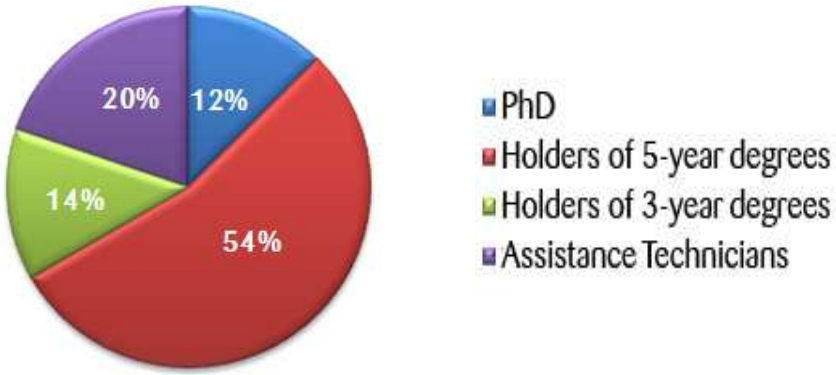
CLIENT (>600)

Personnel

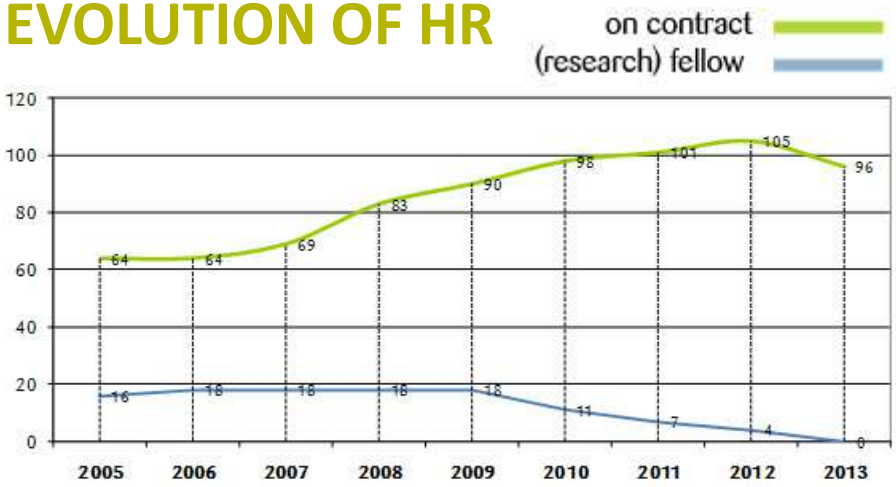
2014 STAFF

Permanent Staff	98
Fellows	0
TOTAL	98

QUALIFICATION PROFILE



EVOLUTION OF HR



Services

R&D&I

QUALITY MANAGEMENT SYSTEMS AND FOOD SAFETY

ANALYTICAL PRODUCT CONTROL AND IN-PROCESS ASSISTANCE

TRAINING

TECHNICAL CONSULTANCY

OPERATIONAL EFFICIENCY

R&D&I

R&D&I: Five Research and Innovative lines

5 RESEARCH LINES (Expertise + New knowledge + Market opportunity)

1	**FOOD INGREDIENTS**	Value-added compounds. Micro-nano-encapsulation. Bioactive ingredients	Supercritical Fluids extraction, microencapsulation, cell culture
2	**PRODUCT & PROCESS DEVELOPMENT**	From product design and formulation to industrial processing and packaging.	Processing pilot plan: Formulation, thermal treatments, packaging
3	**NOVEL FOOD PROCESSING**	Application of novel technologies for developing new products or improving the quality of the existing ones . Equipment design.	HPP, PEF, RF
4	**INDUSTRIAL BIOTECHNOLOGY**	New ways to obtain ingredients and chemicals (fermented foods, industrial fermentative processes). Bacterial ecosystems.	Experimental and pilot scale fermenters. Genetic discrimination DHPLC
5	**SUSTAINABLE FOOD PRODUCTION**	Strategies to minimise food waste and / or limit losses. Valorisation of by-products.	System for filtration and treatment of water

More than **50 ongoing R&D projects** every year

- ## CONTRACT RESEARCH

  We find and analyse the best funding options at regional, national or European levels for the fastest ROI possible for the company.

- ## COLLABORATIVE PROJECTS

  We find partners for collaborative projects, including companies, universities and/or technology organisations, at national and European levels. We develop synergies and complementarities to solve current technological challenges.

- ## OWN PROJECTS

  We develop our own research lines to transfer knowledge to businesses more quickly and safely.

R&D&I: CNTA experience in European Projects

SÉPTIMO PROGRAMA MARCO

2007-2013

- **CNTA has participiped in 28 proposals in FP7**
- **Success rate of 18%**
- **Global funding > 1.04 M€**

HORIZON 2020

2014-2015

- **4 Colaborative projects**
  - **SFS-14a-2014:** Authentication of olive oil
  - **SFS-15-2014:** Proteins of the future
  - **SFS-17-2014:** Innovative solutions for sustainable novel food processing
  - **H2020-WATER-1b-2015:** Water innovation: Boasting its value in Europe.
- **3 SMEs Instrument**
- **Eurostars, Eranet Cofund**

R&D&I: Just some examples….

RESFOOD - **RESource efficient and safe FOOD production and processing (FP7-ENV-2011)**.

Safe re-use of Nutrients, Energy, Water and Biomass in agro-food, maximizing resource productivity and minimizing waste.

Project Reference: 7FP – 308316

Dates: Nov 2012 to Oct 2015

Web Page: http://www.resfood.eu/

RESFOOD
Resource Efficient and Safe Food Production and Processing

Final conference on 17th October in Brussells

Lead Market addressed: Food authorities and food producers

Partnership: 18 partners

Project idea: Development and transfer of innovative production technologies and food processing by using resources in a efficient and safe way.

Project Objectives::

- Minimizing emissions of waste water and biomass and maximizing resource productivity
- Reuse / recycling of resources: water, nutrients, energy
- Recovery of valuable compounds of biological origin from waste biomass
- Affordable, safe and effective disinfection of human pathogens
- Detection and monitoring of pathogens to ensure food security in the food chain (Horticulture, Food Processing, Biomass) and pollution. Essays at pilot / demonstration scale.

R&D&I: Just some examples….

HIPSTER - **Deployment of High Pressure and TempeRature processing for sustainable, safe, nutritious and high quality food.** Commercial production of safe and add-value food with emerging technologies.

Project Reference: H2020-635643

Dates: Mar 2015 to Aug 2017

Web Page: http://hipster-project.eu/

Lead Market addressed: Innovative solutions for sustainable novel food processing

Partnership: 9 parnerts, CNTA Coordinator!!

Project idea: Commercial production of safe and add-value food with emerging technologies

Project Objectives::

- Development of affordable equipment at industrial scale suitable for the implementation of high pressure-temperature (HPT) processing
- Definition of minimum process variables. Creation a public data base
- Verification and validation in industrial environement including compliance with legal requirements, economic feasibility and sustainability in the use of resources

R&D&I: Just some examples….

DIVERSE - **Demonstration of innovative technologies for the removal of priority substances from industrial wastewater.** Pilot scale demonstration in different industrial environment

Duration: 36 months

Lead Market addressed: Water innovation

In evaluation !!!!

Partnership: 20 partners

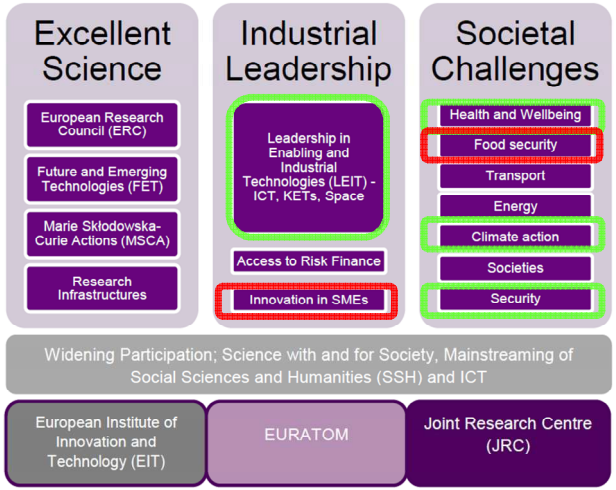
Project idea: Demonstrate innovative technologies suitable for the removal of priority substances from industrial wastewater

Project Objectives::

- 6 selected innovative technologies to be tested and 7 priority substances from various types of industrial wastewater.
- Compare and validate the technical, economic and environmental efficiency of these 6 innovative technologies demonstrated on different wastewaters.
- Support the market replication and penetration of these technologies
- Verification and validation in industrial environement including compliance with legal requirements, economic feasibility and sustainability in the use of resources

R&D&I: Topics of interest (2016-2017)

Some topic of interest identified in Programmes 2016-2017



LINE 1	▪ **BG-01-2016:** Large-scale algae biomass integrated biorefineries ▪ **SFS-39-2017:** How to tackle the childhood obesity epidemic? ▪ **SFS-40-2017:** Sweeteners and sweeter enhancers. ▪ **BG-08-2017:** Innovative sustainable solutions for improving the safety and dietary properties of seafood.
LINE 2	▪ **NMBP-30-2016:** Facilitating knowledge management, networking and coordination in the field of formulated products. ▪ **SFS-37-2016:** The impact of consumer practices in food safety: risks and mitigation strategies. ▪ **SFS-35-2017:** Innovative solutions for sustainable packaging.
LINE 3	▪ **PILOT-02-2016:** Pilot Line Manufacturing of nanostructure antimicrobial surfaces using advance nanosurfaces functionalization Technologies.
LINE 4	▪ **BIOTEC-02-2016:** Bioconservation of non-agricultural waste into biomolecules for industrial applications. ▪ **SPIRE-03-2016:** Industrial technologies for the valorisation of European bio-resources into high added value process streams. ▪ **BIOTEC-07-2017:** New Plant Breeding Techniques (NPBT) in molecular farming: Multipurpose crops for industrial bioproducts
LINE 5	▪ **SC5-12-2016:** Food systems and water resources for the development of inclusive, sustainable and healthy Euro-Mediterranean societies ▪ **CIRC-02-2016 (a):** Water in the context of the circular economy

Other services

Not only R&D&I activities…

- ## Quality Management Systems and Food Safety
  - Consultancy for the design, implementation and monitoring of food quality and safety management systems: HACCP, BRC, IFS , ISO-22000, Food Defense
  - Audits and Inter-comparison campaigns

- ## Analytical Product Control and in-process assistance
  - **Analitical Product Control:** Analysis of food composition, detection of food contaminants, detection of food allergens, food microbiology, Product quality control, sensory analysis, packaging analysis and quality control, wastewater analysis, eco-diagnosis, etc.
  - **In process assistance:** Definition and validation of thermal processes, advice on the industrial development of processes and products, food labelling and fact sheets.

- ## Training Open courses and on-site training

- ## Technical consultancy
  - Technical Consultancy (FDA, USDA, applicable legislation, labelling...)
  - Management of Grants and funding instruments

- ## Operational Efficiency
  - Lean Manufacturing, quality assurance, 6 sigma, strategy, organisational designs

CNTA Capabilities

Capabilities

Packaging and Environmental Laboratory: CNTA has a specific department for packaging and environmental laboratory for the analysis of waste water samples and packaging of any material.

- Spectrophotometers
- Digesters
- Automatic distillers
- Hardness testers
- Sealing and airtightness test equipment
- Fourier-Transform Infrared spectrometer (FTIR)
- Other equipment like presses, tin analyzers, extraction hoods, pH meter, conductivity meter, automatic samplers and flow meters

Physic-Chemical Laboratory: The laboratory has the necessary equipment to determine the composition of food and detect the presence of contaminants.

- Equipment for sample pre-treatment and homogenization
- Digesters for the analysis of proteins and crude fibre
- Manual and automatic distillers
- Equipment for analysis of dietary fibre and fat
- Evaporation systems in nitrogen current
- Rotary evaporators
- Ovens and muffles
- Ultrasonic thermostatically-controlled baths and circulators

Capabilities

Bioprocessing Laboratory: The laboratory comprises these sections:

- Fermentation laboratory with 3 bioreactors for batch fermentations from 2 up to 10 litres.
- Microbiology Research Laboratory:
- Anaerobic workstation: MACS 500 + AIRLOCK (AES CHEMUNEX) for culture of microorganisms with special oxygen requirements (absence or low concentration)
- Automatic colony plate counter (PROTOCOL , AES CHEMUNEX)
- Equipment and materials necessary for counting/isolation and microbial culture.
- Molecular Microbiology Laboratory
- DHPLC equipment for the quantitative/qualitative monitoring of Viable Non-Culturable (VNC) microbial populations

A 50-litre bioreactor is available for scaling up the fermentative / industrial microbiology processes developed in the Bioprocessing Laboratory

Bioassays Laboratory:

- Equipment for temperature control: incubation chambers , thermostatic baths, refrigerators / freezers and a liquid nitrogen container for the storage of microbiological cultures.
- Equipment for the preparation of microbiological culture media.
- Equipment for microbiological inoculation.
- Fast microbiology automated equipment: detection of pathogenic bacteria via UV assays (ELFA - VIDAS) and automated counting of indicator microorganisms by automated MPN method (TEMPO).

Capabilities

Quality Control Laboratory: The laboratory has the expertise and capabilities to ensure that food products comply with the specifications and requirements set by the regulations in force. Including:

- Quality in the finished products
- Product labelling
- Study of plant varieties for industrial application
- Assurance of quality under specific designations and labels.

Sensory analysis is also offered including: discriminative tests, preference descriptive tests and consumer tasting tests supported by chemical analysis: salt, acidity, dry residue, sulphur content, etc.

Instrumentation Laboratory: This laboratory has the following equipment:

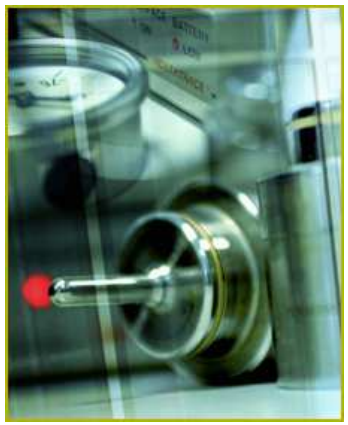
- Gas Chromatography with Mass Spectrometry detection (GC-MS/MS).
- Gas Chromatography with Flame Ionization Detection (GC-FID)
- High Resolution Liquid Chromatography with Mass Spectrometry detection (HPLC-MS/MS)
- HPLC-FL, HPLC-IR, HPLC-DAD
- Atomic Absorption Spectrophotometry
- UV-Visible spectrophotometry
- Inductively coupled plasma mass spectrometry (ICP-MS)
- Microwave digestion system

Capabilities

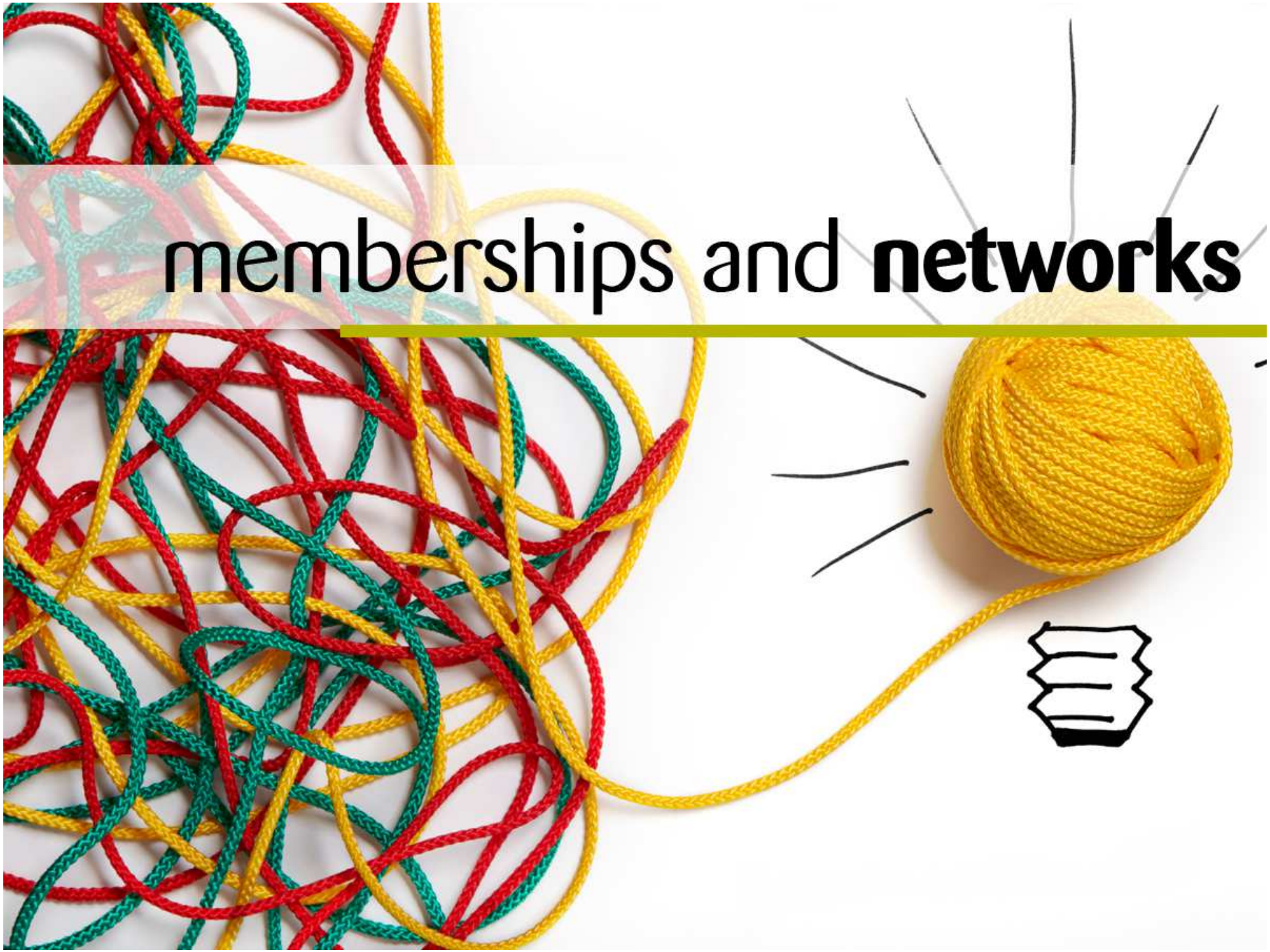
Water Laboratory: This laboratory is equipped with sophisticated equipment for quality control of packaged water, water for human consumption, surface water or groundwater. This equipment include:

- Ion chromatography systems
- Spectrophotometers
- Automatic titrator
- Fluorescence analysers
- Turbidity meter

Pilot Plant: CNTA offers a 300 m2 pilot plant with the necessary equipment for the processing of different food products. Specifically, the plant has equipment for:



- Product preparation: formulator, refinery, press, dicer, bowl, etc.
- Packaging: in glass, tin or plastic containers with modified atmosphere.
- Preservation technologies: rotary autoclave, UHT system with scraped surface tubular heat exchangers, high hydrostatic pressure processing equipment (HPP), high voltage pulses electric fields generator (PEF), radio frequency unit (RF).


memberships and networks

European Partners

ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA
trasa Tratamiento Subproductos Agroalimentarios s.l.
CSIC
ITENE
vito vision on technology
tecnalia Inspiring Business
ICAN
ANFACO Asociación Nacional de Fabricantes de Conservas de Pescados y Mariscos
Indulleida,s a
ain Asociación de la Industria Navarra
TÜBİTAK MAM
FIAB Federación Española de Industrias de la Alimentación y Bebidas
INBIOTEC Instituto de Biotecnología
UBO université de bretagne occidentale
upna Universidad Pública de Navarra
dkfz. German Cancer Research Center in the Helmholtz Association
Iparlat
ainia centro tecnológico
Universidad de Córdoba
ctaex centro tecnológico agroalimentario
Veterinærinstituttet National Veterinary Institute
Centro tecnológico CARTIF
Tic Centro Tecnológico de la Industria Cárnica de La Rioja
Tierärztliche Hochschule Hannover Stiftung
iFA TULLN
AIMPLAS
aneabe
Universidad de Navarra
Universitat de Lleida
TNO innovation for life
ZORELOR
afssa Agence Française de Sécurité Sanitaire des Aliments
eagasc Agriculture and Food Development Authority
Instituto Tecnológico Agrario Junta de Castilla y León Consejería de Agricultura y Ganadería

Associations and Networks

BBI (JTI) (Bio-based industries)

ERRIN (European regions Research and Innovation Network)

COST (Framework for European Cooperation in Science and Technology)

HTH Network (HighTech Europe)

EBN(European Biotechnology Network)

Food For Life-Spain

PTEA (Plataforma Tecnológica Española del Agua)

EBWA (European Bottled Watercooler Association)

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IFTPS (Institute for Thermal Processing Specialists)

SGF (Sure Global Fair)

Associations and Networks

FENAVAL (National Federation of Processed Vegetables and Processed Food)

ASEVEC (Spanish Association of Manufacturers of Frozen Vegetables)

ANEABE (National Association of Packaged Drinking Water)

ASOZUMOS (Spanish Association of Manufacturers of Juices)

AEAZN (Spanish Association of Juices and Nectars Self)

ADEAC (Spanish Association of Packers, Distributors and Suppliers of Water Cooler)

ANICE (Spanish National Association of meat industries)

FEDIT (Spanish Federation of Innovation and Technology)

FELAB (Association of Institutions for Testing, Calibration and Analysis)

EUROLAB (European Federation of National Associations of Measurement, testing and analytical laboraties)


awards, certifications
and licenses

Awards, Certifications and licences

- **Technology Innovation Centre (C.I.T.)**, registered under No. 13 in the Register of Technology Centres and Technological Innovation Support Centres of the Spanish Ministry of Economy and Competitiveness (MINECO).
- **Technology Transfer and Research Liaison Office (TTO)**. Registered under No. 84 on the Register of the General Secretariat of the Spanish National Plan for R&D.
- **Partner organisation of the Ministry of Agriculture, Food and Environment** for the control of water discharges and public water.
- **Laboratory authorised** by **FACE** (Spanish Federation of Celiac Disease Associations) for the control of the "Controlled by FACE" Guarantee Mark.
- Recognised **Process Authority** by FDA (Food and Drug Administration).
- Appointed Process Authority by **General Mills**

GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE

OTRI
Oficina de Transferencia de Resultados de Investigación
Reg. Nº 84 del Libro de la Secretaría General del Plan Nacional de I + D

C.T.
Centro Tecnológico
inscrito con el nº 13 en el Registro de Centros Tecnológicos y Centros de Apoyo a la Innovación Tecnológica del MICINN.

Controlado por FACE

FDA

GENERAL MILLS

Centre for Food Technology and Safety

San Adrián, Navarre. SPAIN

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