

WHO WE ARE

CTAEX is a **private non-profit R&D centre** based in Extremadura, southwest Spain, founded in 2000 by a consortium of complementary agri-food entities. It addresses multiple scientific areas across the agri-food value chain, including sustainable agronomy, food production, biotechnology, and by-product management. The Centre brings together **70 partners or associates** belonging to the most representative agri-food sectors such as tomato, tobacco, wine, rice, olive, livestock, aromatic and medicinal plants, forestry, and natural ingredients, covering both primary and secondary processing as well as the valorisation of agri-food by-products.

CTAEX's research activity, whose results are transferred through its **Knowledge Transfer Office (KTO)**, is focused on two specific technological pillars: **agricultural and food research**. Within these areas, the research lines defined as strategic are established, structured around three cross-cutting technological axes: **sustainability, agri-food diversification, and information and communication technologies (ICT)**. Based on these axes, priority subsectors are identified, corresponding to groups of significant relevance in the Iberian Southwest, both due to their strategic activity and their future development potential.

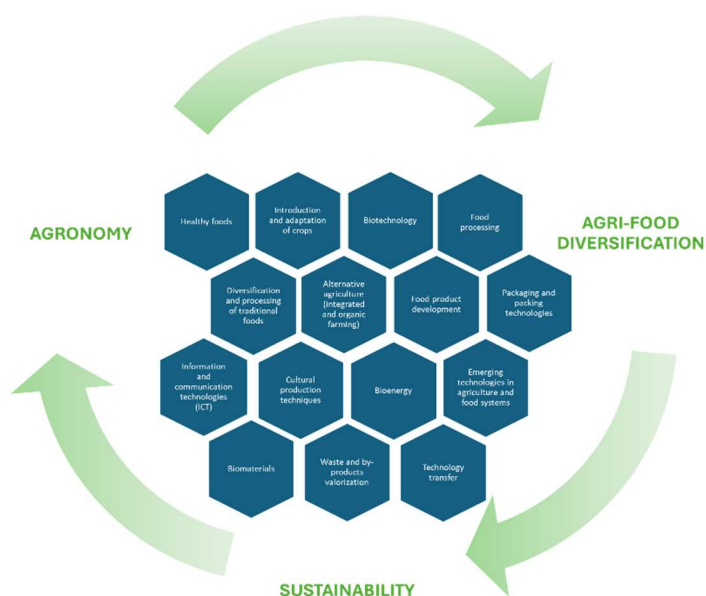


Figure 1.- CTAEX's research lines

The Centre brings with **experimental farms, food pilot plants, kitchen and tasting rooms, and food quality control, physical chemical and microbiological laboratories, and equipment and process control facilities**, so that it is possible to follow the complete agri-food process, "From Farm to Fork". CTAEX supports innovation and technology transfer from primary production to consumption to enhance sustainability, competitiveness and circularity.



Figure 2.- CTAEX's areas

Participation in **almost all steps of the value chain of several primary sectors** gives us an optimal positioning at the Center of the quadruple helix model of the regional innovation system (science, policy, industry, and society), ensuring a multi-actor approach, bi-directional co-creation and knowledge exchange processes and between the actors in all the activities we carry out.

WHAT WE OFFER (expertise, infrastructures and skills offered)

To support sustainable and biodiversity-friendly agriculture, it is essential to first list demonstrated farming practices that benefit the environment. **CTAEX's Agricultural Area** has at its disposal green houses and 23 hectares of experimental farms (4 ha "ECO" certified among them) indicated for pot trials and large-scale cultivation and equipped with an irrigation general installation in total covering with a 1.000 m² storage pool and irrigation water supply wells. Besides CTAEX is authorized by the regional government to work with GMOs. This infrastructure enables the implementation and evaluation of environmental-friendly practices such as reducing the use of plant-protection products, optimizing fertilization strategies and irrigation efficiency, improving soil management, and testing crop varieties with enhanced tolerance to multiple stresses.

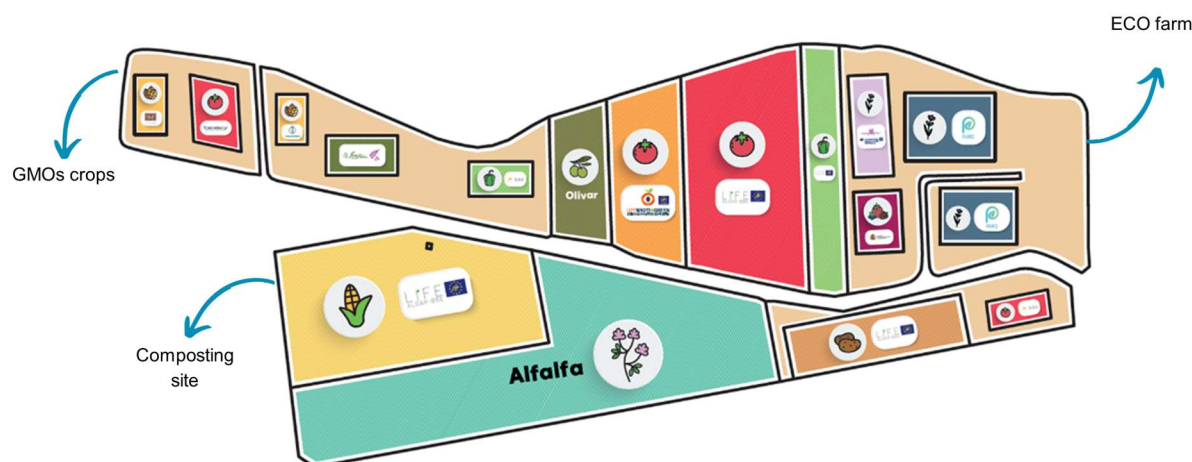


Figure 3.- CTAEX's experimental farms

CTAEX has the authorization as a Producer of Seeds and Greenhouse Plants, with registry entry number ES/10/06/2574 as a Multiplier Producer for forest and ornamental species groups, horticultural plants, horticultural seeds, and as a Breeder-Selector Producer for textiles species groups (*Cannabis sativa* L.), as well as for the use of PEU Plant Passport.

In addition, CTAEX actively participates as an advisor in numerous trials conducted on external plots belonging to other cooperatives, and agricultural companies throughout the country to support farmers to transition to the incorporation of new crops or more sustainable agricultural practices in the European production systems by widely sharing practical knowledge and potentially deployed at large scale. Hereby enabling strong engagement and collaboration with other stakeholders across the agricultural value chain.

CTAEX's Food Technology Area is equipped with both: facilities and machinery that make it possible to cover a great variety of industrial food products elaboration processes at laboratory and pilot scale, supported by its pilot plant and experimental kitchen.

The Centre focuses on the development of new food products and the adaptation of existing products to meet evolving market demands, with a strong emphasis on functional and healthy foods. Traditional products are reformulated or enhanced with natural ingredients and innovative processes to improve their nutritional and functional properties without compromising sensory quality. Its services cover a wide range of product categories (semi-processed foods, ready meals, dairy, by-product valorization and functional foods) as well as advanced processing technologies such as 4th and 5th range products, aseptic treatments, pasteurization, and sterilization. Preservation techniques aim to reduce thermal dependency, utilize natural additives, extend shelf life, and ensure energy-efficient, minimally invasive processing that meets consumer demand for high-quality, minimally processed foods.

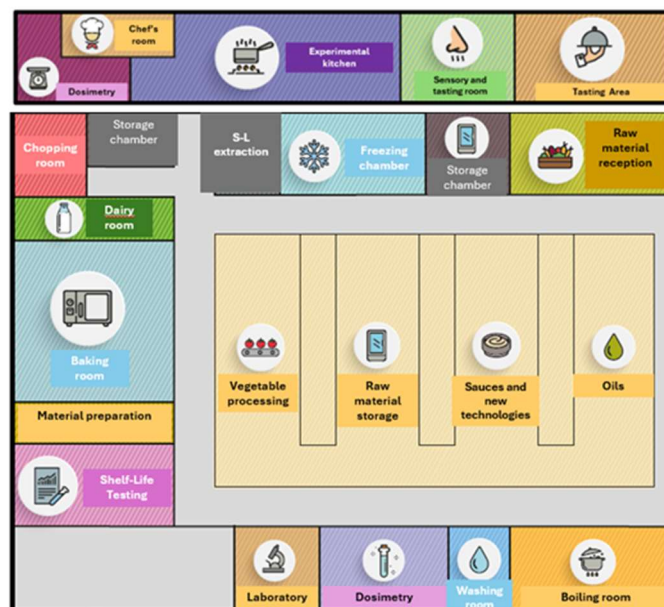


Figure 4.- CTAEX's pilot plant and experimental kitchen

In addition, CTAEX provides comprehensive technical and sensory services to support industrial implementation, including sensory evaluation, shelf-life studies, ingredient assessment, formulation optimization, and sample production for market studies. The Centre also offers technical consultancy, process optimization, feasibility studies, and energy valorization of by-products. Special attention is given to consumer trends toward “superfoods” and products that are more natural, less processed, and lower in additives, contributing to sector diversification and supporting sustainable and innovative agri-food development.

In addition, CTAEX have four health registration numbers to manufacture, preparation, transformation and packaging of meat products, ready meals and sauces, condiment and spices and preserved vegetables, vegetables and pulses and extracts of products of vegetable. This enables the Center to carry out applied research and pilot trials under conditions equivalent to those of the food industry, ensuring that the resulting products are legally fit for human consumption and that the outcomes are directly transferable to industry and market-oriented innovation.

For its part, **CTAEX's Process Area** is integrated by the analytical department, biotechnology department and the transversal projects department.

The Analytical department carries out analysis for the agri-food sector of the area. Apart from the external companies' agri-food matrices analysis, this Dept. addresses R&D lines related to the extraction, isolation and stabilization of chemical interesting compounds found in agricultural and food residues and by-products. This department is highly specialized in agri-food kind of matrixes. The Laboratory is accredited by ENAC in the UNE-EN ISO/IEC 17025:2017 standard with accreditation number 1467/LE2629 for medicinal cannabis and industrial hemp testing.

The Biotechnology department is equipped with specialist laboratory facilities and applied expertise for the development, optimisation and validation of microbiological and biotechnological solutions aimed at supporting the transition towards more sustainable, resilient and biodiversity-friendly agri-food systems.



Figure 5.- CTAEX's biotechnology area

The Biotechnology area focuses on the design, characterisation and optimisation of functional microbial consortia and microbe-plant interaction strategies, contributing to the expansion of non-chemical and preventive approaches within integrated management frameworks. The department has proven experience in working with microorganisms relevant to agriculture, including the evaluation of their functional traits related to nutrient mobilisation, stress mitigation and plant performance under real agronomic conditions.

In addition, the Biotechnology area provides expertise in the assessment of soil-plant-microbiome interactions, supporting data-driven monitoring and the evaluation of biological solutions under different environmental and management scenarios.

Through its applied research and demonstration capacity, CTAEX ensures that developed biotechnological solutions are technically robust, scalable and directly transferable to real farming context, fully aligned with Farm to Fork priorities on sustainability, integrated management and long-term system resilience

The Transversal projects department carries out the technical advice on agri-food processes, optimisation of phases, by-products valorisation (extraction and recovery of active principles and interest compounds, use in animal feed or agriculture and energy production) and decarbonisation and promotion of bioenergy. It is equipped with a by-product laboratory (processing and conditioning) and biomethanization equipment at laboratory and pilot scale to biogas production.



Figure 6.- S-L extraction pilot plant and biomethanization pilot plant

Additionally, CTAEX provides project results' diffusion and dissemination through its certified **Knowledge Transfer Office (KTO)**. It offers three rooms with varying capacities: a meeting room for up to 80 people, a training room for up to 20 people, and a business room for up to 15 people. Each room is equipped with the necessary audio-visual media for various conferences and events, including PCs, projection systems, screens, and supporting boards. CTAEX has also launched several Technological Observatories (<https://ctaex.com/observactaex>), as platforms to transfer the latest technologies and research results in the field of R&D&I applicable to the agri-food sector.



Figure 7.- Knowledge Transfer Office (KTO) services

CTAEX has experience in communication and dissemination actions as follows:

Communication:

- ✓ Developing a communication strategy that outlines key messages and identifies the most effective channels to reach primary target audiences, such as the general public and specific stakeholder or user groups.

- ✓ Assisting in communicating and disseminating key messages and project outcomes across multiple social media platforms (e.g., Facebook, LinkedIn, Twitter), as well as through press releases on relevant national/international scientific information platforms and on the project website.

Dissemination:

- ✓ Developing a concise layman's report that clearly outlines the project's features, objectives, and expected outcomes, tailored for policymakers and other influential stakeholders with non-technical backgrounds.
- ✓ Creating technical factsheets tailored to the specific profiles of various target audiences, such as academic members, producers (farmers and associations), and others.
- ✓ Assisting in prioritizing the establishment of connections with related initiatives at both national and international levels, including ongoing projects or networks, to enhance collaboration within and beyond the scientific community.
- ✓ Engaging relevant stakeholders from the agrifood sector by inviting them to participate in specific events, such as roundtables, discussion forums, formal e-consultations, policy briefs, or workshops scheduled throughout the project timeline.
- ✓ Establishing a comprehensive database of specialized contacts, encompassing a wide range of stakeholders to be engaged in communication and dissemination activities. All partners will be responsible for updating this database with contacts relevant to their sector.
- ✓ Organizing tailored training sessions, seminars, conferences, and workshops or demonstrations for various stakeholders, including regional public administrations.
- ✓ Supporting the organization of a final conference or meeting to present the project's results comprehensively. The event will emphasize interactive and engaging sessions, such as demonstrations, roundtables, and matchmaking opportunities, designed to attract stakeholders from diverse sectors. To maximize attendance, the event could be scheduled to coincide with an international conference, congress, or symposium related to the project's topic.

The use of **ICTs and digitalisation processes** are the real drivers of development in agriculture and the food industry. The demonstration of 4.0 processes is one of the pillars of the centre, through the implementation of "farm-food-labs".

CTAEX operates a certified **Management System** in accordance with the following reference standards: UNE 166002 R&D&I Management System and ISO 9001 Quality Management System. In compliance with these standards, a specific **training plan** is established, aligned with the Centre's research lines and the professional development needs of its staff. In addition, participation in relevant conferences, forums, and trade fairs is duly planned to ensure that researchers have access to reliable and up-to-date information.

Furthermore, the Centre has implemented a **Career Development Plan**, aimed at improving working conditions and providing flexible working arrangements for researchers who choose to further their academic qualifications through master's or doctoral programmes. In the latter case, the Centre facilitates, whenever possible and strictly for academic purposes, access to its know-how to support the development of postgraduate research.

CTAEX belongs to several **Platforms** such as Technological Platform on vegetal Biotechnology (**BIOVEGEN**), Technological Platform Food for Life Spain (**PTF4L Spain**) and Bio-based Industries Consortium (**BIC**). Moreover, CTAEX is a founding partner of the **Hemp Technology Pole**. CTAEX is part of the 67 centers belonging to **FEDIT** (Spanish Federation of Technological Centers) and "Cooperativas Agro-alimentarias de España" (organisation

that represents the agri-food cooperative movement before national and European bodies, institutions and associations related to the agri-food sector and the social economy). CTAEX also participates in other significant alliances and agreements to achieve more efficient actions in support of the companies it serves. CTAEX is recognized as a **Cervera Excellence Center** in the priority area of Circular Economy, is member of the **National PI+D+I Innovation Support Network**, coordinated by the CDTI, to provide advice on public aid to companies seeking the best public funding for their R&D&I activities, through regional, national, European or international programs and has been selected as an Advisor Support Service within the European **AKIS Network**.

CTAEX is a key actor within the science, technology and innovation system because it combines three essential elements: strong in-house technological capabilities, extensive experience in knowledge transfer, and a solid network of associated companies representing the agri-food sector of Extremadura. This combination enables CTAEX to operate not only as a technology center, but as a comprehensive innovation platform covering the entire value chain “from farm to fork,” fully aligned with European, national and regional priorities.

CTAEX develops applied research focused on addressing real challenges faced by agri-food companies. Its expertise spans plant and food biotechnology, industrial microbiology, development of bioactive compounds, biofertilizers and biostimulants, as well as crop improvement and sustainable agricultural practices tested under real field conditions. Through its registered pilot food plant, CTAEX supports the development of new products and the optimization of processing technologies, helping innovative ideas reach the market. Its specialized laboratories ensure quality and food safety through physicochemical, microbiological and nutritional analysis.

Sustainability and circular economy are also central to its work, promoting the valorization of agri-food by-products, biomaterials, bioenergy and resource efficiency to support sector decarbonization. In parallel, CTAEX integrates digital technologies such as sensors, NIR technology, traceability systems, decision-support tools and process automation to enhance competitiveness and modernization.

Beyond research, CTAEX plays a strong institutional role as a Knowledge Transfer Office, acting as a bridge between research and industry. It supports companies in identifying innovation opportunities, preparing and managing projects, protecting intellectual property, and disseminating technological trends and results.

Its extensive network of cooperatives, processing industries, biotechnology firms, technology providers and financial partners strengthens its impact. This close connection to the productive sector allows CTAEX to test, validate and scale solutions in real environments, consolidating its position as a true driver of innovation and competitiveness in the agri-food sector, particularly in Extremadura.

Our partners: <https://ctaex.com/es/ctaex/empresas-asociadas>

CONTACT DETAILS

E-mail: ctaex@ctaex.com

Website: <https://ctaex.com/>