



**ACTIVITY  
REPORT**  
2025

**IRTA<sup>®</sup>**



Generalitat  
de Catalunya

INDEX

**2**  
PAGE

PRESENTATION

ORGANISATION,  
PEOPLE |  
BUDGET

**4**  
PAGE

**8**  
PAGE

40 YEARS OF  
LOOKING TO  
THE FUTURE

STRATEGIC PLAN  
2024-2027

**12**  
PAGE

**16** SCIENTIFIC PRODUCTION  
**17** PROJECTS  
**17** CONTRACTS  
PAGE

**18**  
PAGE

NEWS  
SCIENTIFIC  
HIGHLIGHTS

DISSEMINATION  
IN THE SECTOR

**28**  
PAGE

INDUSTRIAL  
PROPERTY

**32**  
PAGE

COMMUNICATION  
TO SOCIETY

**36**  
PAGE

**34**  
PAGE

OUR  
NETWORK

**40**  
PAGE

LOCATIONS  
WHERE  
WE WORK

# TRANSFORMING CHALLENGES INTO COLLECTIVE OPPORTUNITIES

In 2025, we have seen that Catalonia's agri-food sector has the capacity to move forward and adapt, but also **that collaboration among all stakeholders is essential**. Global challenges, extreme weather conditions, resource constraints and emerging health threats put every decision and every project to the test. At the same time, these challenges provide an opportunity to work together, explore new solutions and shape the future. What makes the sector resilient is not only the resources or technologies we apply, but also **the people who**

The Right Hon. Mr  
**ÒSCAR ORDEIG MOLIST**  
Minister for Agriculture, Livestock,  
Fisheries and Food  
and President of the IRTA



**work in it and the way they connect and collaborate with each other.** Producers, companies, cooperatives, research centres and public authorities share knowledge, exchange experiences and learn together. This mutual trust and coordination are what enable us to move forward with confidence and respond effectively to new challenges.

For the Generalitat de Catalunya, promoting research and knowledge transfer in the primary sector is a priority, necessary to prepare it for the major challenges ahead. In this context, the IRTA provides the expertise and tools needed to turn ideas into action. Research is only part of the equation: it is also about **supporting professionals in their day-to-day work, testing practical solutions, and providing the data and knowledge** needed to make effective decisions. From more efficient irrigation systems to biosecurity measures and new agricultural practices, each project contributes to a more resilient sector that is better prepared for the future.

Innovation is both a driver of change and a tool for benefiting from new opportunities. Testing new varieties, implementing digital technologies and exploring new management approaches enable producers and companies to adapt quickly, reduce risks, and improve food quality and safety.

The agri-food sector plays a vital role in shaping the region, connecting people and consumers, creating employment, and preserving traditions and landscapes. **Preparing the upcoming generation and providing training and opportunities for young professionals** is a shared responsibility and, at the same time, a guarantee that the sector will continue to grow and innovate.

We have also had to address the resurgence of health threats like African swine fever (ASF), bird flu (avian influenza; AI), and lumpy skin disease (LSD). These three diseases can jeopardise livestock production, economic activity and public confidence in the sector. Nevertheless, by rigorously implementing prevention and control protocols, leveraging a cutting-edge knowledge system, and delivering a rapid, coordinated response, **we have managed to contain these threats and prevent their spread.** In Catalonia, the IRTA-CReSA is a leading research centre that responds to these challenges with the highest standards of professionalism and scientific rigour.

2025 made it clear that knowledge, action and collaboration work together. If we continue along this path, Catalonia will be able to consolidate a strong and competitive agri-food sector capable of **guaranteeing high-quality, safe, and healthy food**, while becoming a leader in food production in Europe.

# 40 YEARS OF RESEARCH FOR A MORE RESILIENT FUTURE

This year, **we celebrated 40 years of research and innovation:** four decades working alongside people willing to embrace change, enabling us to build international partnerships, such as our collaboration with California, aimed at modernising irrigation and agriculture.

2025 also highlighted **the importance of global health.** The health challenges we face, from emerging diseases to pests and viruses that can affect both animals and people, require targeted research and state-of-the-art biosecurity infrastructure.

At the end of November, an outbreak of African swine fever (ASF) detected in wild boar in the Bellaterra area of Cerdanyola del Vallès (Barcelona) **tested our capacity to respond effectively, coordinate action, and anticipate emerging risks.** Around forty IRTA-CReSA staff members worked tirelessly to diagnose the disease and support efforts to contain the outbreak. This shows that research and biosecurity are essential tools for safeguarding global health while also strengthening the resilience of the agri-food sector.

But 2025 was about much more than that. **We focused our efforts on addressing the major challenges** facing Catalonia's agri-food sector. We further developed surveillance and control projects that target other diseases, like lumpy skin disease (LSD), and explored innovative biological solutions, including the controlled release of parasitoid wasps to combat pests affecting strawberry and cherry crops.

At the same time, we continued to **develop projects aimed at tackling the challenges of climate change.** Examples include studies to improve the sustainability of extensive rice cultivation in the Ebro Delta; the development of the first Catalan oyster, to reduce dependence on external supply; and the transformation of traditional crops to adapt them to changing climate conditions.

**We also explored new protein sources and regenerative agriculture in Catalonia,** promoting sustainable alternatives, including broad beans, and implementing practices such as organic fertilisation, cover cropping, and reduced tillage to help mitigate the effects of climate change.

We boosted the bioeconomy through the construction of a biogas plant at the IRTA Mas Bové site, which **will optimise waste management and generate renewable energy.** At the same time, we worked hard to ensure that Catalonia's agri-food sector plays a leading role in the digital revolution, harnessing emerging technologies to enhance competitiveness and sustainability.

In addition, IRTA La Ràpita has become a new Restorative

Aquaculture Demonstration Centre in the Mediterranean. As part of our commitment to strengthening our presence and impact across the region, in 2025 we also reinforced institutional collaborations in Lleida and the Pyrenees to help **transform Catalonia's agri-food system.**

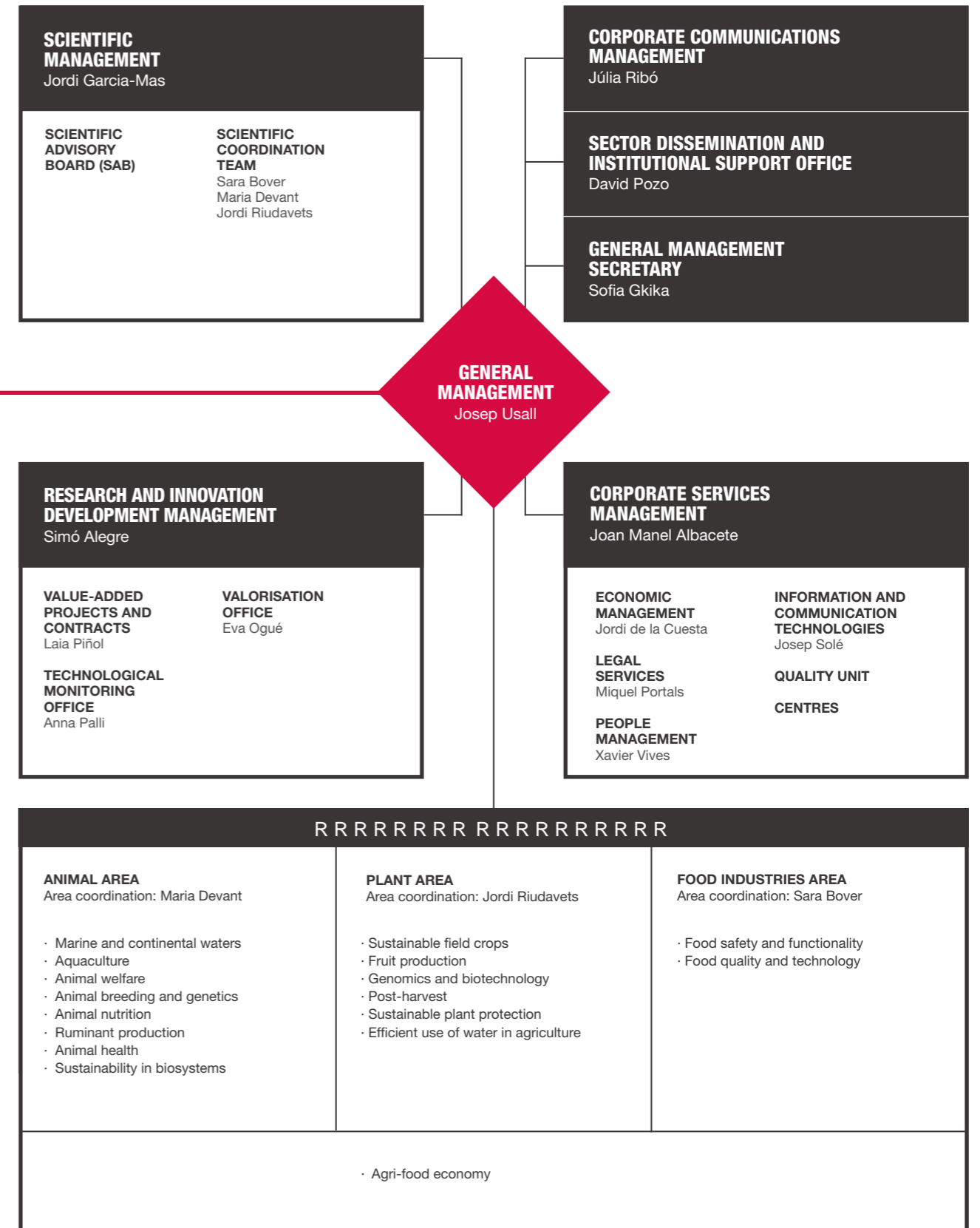
None of this would have been possible without the **more than 1,000 IRTA professionals** who, in over twenty locations throughout Catalonia, work rigorously, with integrity, commitment and excellence.

Rooted in the region but looking outwards to the world, we share a common purpose: **to help transform food systems for a future of sustainable well-being, where animal and human health, sustainability and innovation** form the foundation of a strong agri-food sector that is prepared for both present and future challenges.

**JOSEP USALL I RODIÉ**  
General Manager of IRTA



# ORGANISATION



## SCIENTIFIC MANAGEMENT

**DIRECTOR**  
Jordi Garcia-Mas

**SCIENTIFIC COORDINATION TEAM**  
Sara Bover · Maria Devant · Jordi Riudavets

### ANIMAL AREA

**MARINE AND CONTINENTAL WATERS**  
Jorge Diogène

**AQUACULTURE**  
Enric Gisbert

**ANIMAL WELFARE**  
Antoni Velarde

**ANIMAL BREEDING AND GENETICS**  
Raquel Quintanilla

**ANIMAL NUTRITION**  
Maria Devant

**RUMINANT PRODUCTION**  
Maria Devant

**ANIMAL HEALTH**  
Natàlia Majó

**SUSTAINABILITY IN BIOSYSTEMS**  
August Bonmatí

### PLANT AREA

**SUSTAINABLE FIELD CROPS**  
Marta da Silva

**FRUIT PRODUCTION**  
Luis Asin

**GENOMICS AND BIOTECHNOLOGY**  
Maria José Aranzana

**POST-HARVEST**  
Neus Teixidó

**SUSTAINABLE PLANT PROTECTION**  
Jordi Riudavets

**EFFICIENT USE OF WATER IN AGRICULTURE**  
Jaume Casadesús

**AGRI-FOOD ECONOMY**  
José Maria Gil

### FOOD INDUSTRIES AREA

**FOOD SAFETY AND FUNCTIONALITY**  
Sara Bover

**FOOD QUALITY AND TECHNOLOGY**  
Sara Bover

## OUR PURPOSE

We aim to help transform food systems for a future of sustainable well-being.

## OUR MISSION

To contribute to the modernisation, competitiveness and sustainable development of the agricultural, food and aquaculture sectors, to supply healthy, quality food for consumers and, in general, to improve the well-being of the population.

## OUR VISION

To become a scientific benchmark, a driving force for innovation and technology transfer. We want to be the strategic ally of the agri-food sector.

## OUR VALUES

INTEGRITY

COMMITMENT

RESPECT FOR THE ENVIRONMENT

EXCELLENCE

12% PHD CANDIDATES

9% STUDENTS IN INTERNSHIP, VISITORS AND OTHERS

79% IRTA STAFF

74% TECHNICAL STAFF

26% RESEARCH STAFF

# 1,087 PEOPLE

613 WOMEN



474 MEN

9% IN-HOUSE STAFF REPRESENTING 27 DIFFERENT NATIONALITIES

37% STRUCTURAL CONTRIBUTION FROM THE GENERALITAT OF CATALONIA

37% RESEARCH AND INNOVATION PROJECTS WITH PUBLIC FUNDING

22% CONTRACTS, PROJECTS AND SERVICES WITH COMPANIES

4% OTHERS

## BUDGET

75,386,880 EUROS IN REVENUE

↑ 5,80% COMPARED TO 2024

# 40 YEARS OF LOOKING TO THE FUTURE

In 2025, we celebrated forty years of history. Over this time, we have generated knowledge, innovated, and delivered solutions that not only strengthen the agri-food sector, but also improve people's quality of life. We have grown alongside the region, conducting mission-oriented research with the aim of **responding to society's real needs**.

Since 1985, we have been **advancing science to feed the future**, contributing to the modernisation, competitiveness and development of the agricultural, food and aquaculture sectors, as well as providing healthy, high-quality food, with the goal of

transforming food systems towards a **future of sustainable well-being**.

Today, we are **one of the largest research institutes in Catalonia and Spain**, with more than 1,000 professionals working in research centres, experimental farms and other facilities throughout the region, driving forward projects with both national and international impact. This journey has been possible thanks to the trust of the sector, collaboration with public authorities, and the dedication of our entire team.

**1985 — 1995**

ORIGINS AND DEVELOPMENT AS A PIONEERING AGRI-FOOD RESEARCH INSTITUTION IN CATALONIA

**1995 — 2005**

CONSOLIDATION AS A LEADING INSTITUTION FOR THE SECTOR IN SPAIN

**2005 — 2015**

TERRITORIAL EXPANSION, RESILIENCE AND INTERNATIONALISATION

**2015 — 2025**

EXPANSION, INNOVATION AND GLOBAL CHALLENGES



## Marking 40 years of achievement with a gathering of IRTA professionals from across Catalonia

On 5 June, nearly 700 professionals from all the IRTA locations across Catalonia gathered at Castell de Ben Viure, in Castellbisbal, to celebrate the 40th anniversary of our institute. We designed the event as **an opportunity for reunion, recognition and a shared reflection** on the major challenges ahead.

Throughout the day, **we highlighted everything we have achieved as an institution.** We shared experiences, projects and personal stories that demonstrated the importance of our collective effort and the dedication of all the people who comprise the IRTA.

As part of the celebration, **we recognised staff members who had completed 25 and 40 years of service** at the IRTA, highlighting the value of accumulated knowledge and generational renewal in the public research system.

In a group activity, we also put our collective memory to the test and strengthened the connections between people and areas of expertise.

The institutional segment of the event featured speeches by the General Manager Josep Usall and the Minister for Agriculture, Òscar Ordeig, who highlighted the IRTA's strategic role in addressing the challenges of climate change, digitalisation, global health, and food-system sustainability.

At this meeting, we not only looked back to recognise everything we have built, but also highlighted how, for forty years, we have been working closely with the region, contributing scientific knowledge and rigour, partnerships, and a global outlook.



## Celebrating our 40th anniversary with Catalonia's agri-food community

On 26 June, the Palau de la Música Catalana in Barcelona hosted the institutional event marking our 40th anniversary.

**More than 300 representatives from companies, universities, research centres and public authorities** came together to celebrate four decades of research.

During the event, Minister Òscar Ordeig and IRTA's General Manager Josep Usall highlighted the institute's strategic role in addressing global challenges. The President of the Generalitat de Catalunya, Salvador Illa, and the Secretary of State for Agriculture, Begoña García, also underlined **the importance of public science and the IRTA's strong connection with the region.**

We also announced an investment plan for the next five years, including the construction of a **new strategic level 3 experimental biosafety unit** at the Animal Health Research Centre (IRTA-CReSA). This infrastructure, which will include an insectary, unique in Catalonia, will enable the safe study of emerging and zoonotic infectious agents, strengthening research into global health.

Through this celebration, **we reflected on forty years of history** and all our achievements, while also looking ahead to future challenges, always rooted in the region and working in partnership with the agri-food sector.



# STRATEGIC PLAN 2024-2027

We have reached the halfway point of the 2024–2027 Strategic Plan, a key moment to take stock and, above all, reaffirm our direction. The global context has not only **confirmed the major challenges we identified**, but has made them even more evident and urgent.

**Climate change is a reality** that directly affects food production, water availability, and ecosystem health. At the same time, current food systems **contribute significantly to the pressure on planetary limits**, from biodiversity loss to greenhouse gas emissions. Transforming these systems is not an option; it is a necessity.

We are also experiencing a digital revolution that is **transforming the way we produce, manage and share knowledge**. Digitalisation is creating significant opportunities to improve the efficiency and competitiveness of the agri-food sector. At the same time, health has become firmly established as a global and interconnected issue: human, animal, plant, and environmental health are all part of a single system that must be addressed through an integrated approach.

Added to all this is globalisation that places increasing pressure on supply chains and **brings issues such as food sovereignty and self-sufficiency to the fore**. Ensuring sufficient, safe and healthy food for all is a strategic challenge for Catalonia.

Against this backdrop, the IRTA continues to fulfil its commitments: strengthening scientific excellence, **attracting and retaining talent**, building partnerships with key stakeholders across the sector, and working to ensure that the knowledge we generate has a tangible impact on both the productive sector and society as a whole.

Having reached the halfway point of this journey, the time has come to consolidate everything we have set in motion and intensify our efforts to ensure that our **research delivers an even greater impact** in the sector and for society.

## SCIENTIFIC RESEARCH AREAS

### CLIMATE CHANGE RESILIENCE

DEVELOPING PRACTICES AND SOLUTIONS THAT ENABLE AGRI-FOOD SYSTEMS TO ADAPT TO THE IMPACTS OF CLIMATE CHANGE, AND THOSE THAT HELP US TO MITIGATE ITS EFFECTS

### SUSTAINABLE PRODUCTION INTENSIFICATION

OPTIMISING FOOD PRODUCTION BY INCREASING YIELDS WITHOUT COMPROMISING NATURAL RESOURCES

### ONE HEALTH

ADDRESSING HEALTH THROUGH AN INTEGRATED AND PREVENTIVE APPROACH, RECOGNISING THE INTERCONNECTION BETWEEN HUMAN, ANIMAL AND ENVIRONMENTAL HEALTH IN ORDER TO ANTICIPATE RISKS AND ENSURE A SAFE, SUSTAINABLE AND HIGH-QUALITY FOOD SUPPLY

### DIGITALISATION AND TRANSFORMATIVE TECHNOLOGIES

APPLYING ADVANCED DIGITAL TECHNOLOGIES AND OTHER AVAILABLE SOLUTIONS TO IMPROVE EFFICIENCY AND INNOVATION IN THE AGRI-FOOD SECTOR

# STRATEGIC SCIENTIFIC OBJECTIVES

Over these four years, **our goal is to further our progress, guided by eight strategic scientific objectives** that shape all our activities and address the major global challenges we face.

We are working hard to **transform the agri-food sector** through more efficient water use, improved soil health and the promotion of the circular economy. We are also committed to sustainable protein alternatives, ensuring animal welfare and

strengthening our capacity to anticipate emerging biological risks. We are also strengthening our **viticulture research** to adapt to climate change.

Through these eight strategic objectives, we combine scientific rigour, innovation and collaboration to advance a more efficient food system and contribute to a **future of sustainable well-being**.



## 8 GOALS:

### 1 BOOSTING THE DIGITAL TRANSFORMATION OF THE AGRI-FOOD SECTOR

We are driving the digital transformation of the agri-food sector by identifying the key technologies at each stage of the data cycle and providing rigorous, evidence-based information.

We have established **Agrolabs Digitals** and developed a cloud-based platform. In addition, we are investing in digital twins and implementing precision agriculture, livestock farming and food processing.

### 2 OPTIMISING WATER MANAGEMENT FOR AGRICULTURAL USE

We are conducting research into water management to ensure that financial and environmental sustainability go hand in hand.

We identify the crops and varieties best suited to each area, and **optimise irrigation and water use** in both farms and industry. In addition, we are promoting the digitalisation of the water cycle while contributing to improved water governance and greater water reuse.

### 3 IMPROVING CARBON SEQUESTRATION AND SOIL HEALTH

We are studying how regenerative practices influence carbon sequestration and soil biodiversity, and how these can be adapted to the specific conditions of each farm and region.

In addition, we have established a **network of demonstration farms and experimental field sites** to support long-term research, while raising awareness of the importance of preserving soil health.

### 4 PROMOTING THE BIOECONOMY BY VALORISING ORGANIC WASTE AND AGRI-FOOD BY PRODUCTS

We have begun the construction of **two experimental biogas plants** to optimise the recovery and valorisation of livestock manure.

We are exploring emerging technologies for biomass valorisation and promoting the conversion of co-products and by-products from the agri-food value chain into high-value resources.

### 5 BOOSTING THE ALTERNATIVE PROTEIN SECTOR

We are looking at how to produce biomass and transform it into specific ingredients. At the same time, we are investigating how to incorporate these ingredients into food and animal feed while ensuring the highest standards of quality and safety.

We are also analysing which **complementary protein sources** can be successfully produced in Catalonia and studying consumer behaviour.

### 6 GUARANTEEING ANIMAL HEALTH AND WELFARE IN THE CONTEXT OF REDUCED ANTIBIOTIC USE

We analyse how to **prevent disease and promote animal health** by identifying the factors that contribute to better health outcomes.

When animals become ill, we investigate early diagnostic systems and develop alternative treatments, which we test using organoid models to reduce the need for in vivo studies. We also assess the real-world impact of public policies on animal health.

### 7 ENHANCING RESILIENCE TO EMERGING BIOLOGICAL RISKS

We are developing advanced epidemiological surveillance systems to predict emerging pests and diseases, supported by early diagnostic capabilities and preventive tools.

In 2025, we established **the One Health Expert Committee** and began expanding the new biosecurity facilities at the IRTA-CReSA.

### 8 BOOSTING RESEARCH INTO VITICULTURE IN RESPONSE TO THE NEW CHALLENGES FACING THE SECTOR

We see the vineyard as an integrated system where everything is interconnected. We are conducting research and driving innovation to identify and **select the grapevines best adapted to climate change**.

We implement efficient management, optimise the use of water and soil resources, and develop strategies to minimise pests and diseases, ensuring the long-term sustainability of viticulture.



SCIENTIFIC PRODUCTION

# 514

## SCIENTIFIC ARTICLES

PUBLISHED IN JOURNALS OF THE WEB OF SCIENCE CORE COLLECTION

**62%**  
ARTICLES WITH INTERNATIONAL CO-AUTHORS

**77%**  
ARTICLES PUBLISHED IN Q1 JOURNALS

**19**  
DOCTORAL THESES DEFENDED



**32.142**  
CITATIONS

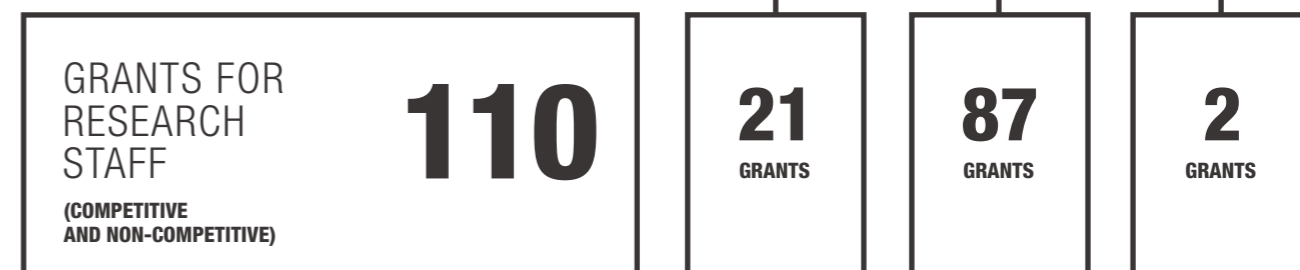
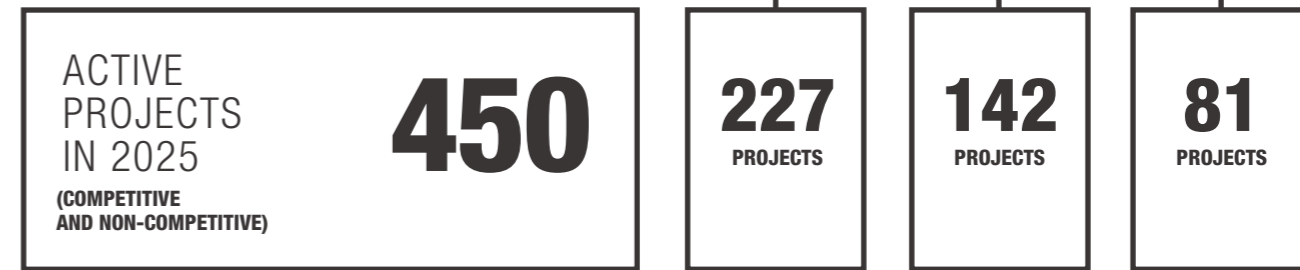
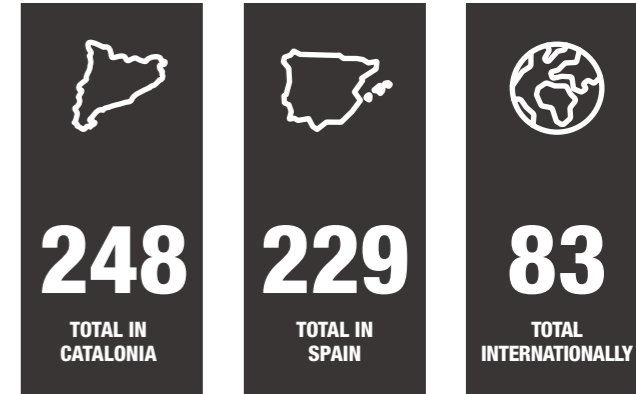
**13**  
BOOKS OR BOOK CHAPTERS



# 398

## COMPETITIVE PROJECTS

(PERSONNEL AND PROJECTS)



**5.09**  
**M€**

VALUE OF NEW BUSINESS WITH INTERNATIONAL COMPANIES



**44**  
COUNTRIES ON 5 CONTINENTS

# 1,420

## CONTRACTS WITH 1,000 CLIENTS

# SCIENTIFIC SCIENTIFIC HIGHLIGHTS

## PLANT AREA

### We are involved in the MANSO project to improve soil and water management in vineyards

We have launched the MANSO project, an initiative aimed at developing innovative soil and water management strategies to enhance vineyard resilience. Coordinated by the wine cluster INNOVI, the project brings together five wineries from the Penedès region, with scientific support from INCAVI, the Faculty of Oenology at the Universitat Rovira i Virgili, and the Cava Producers Association. MANSO is being implemented in vineyard plots with diverse characteristics to ensure that the results can be extrapolated and contribute to a viticulture model adapted to future climate scenarios.



### Analysis of the water requirements of the Canals d'Urgell irrigation system to ensure efficient water use

At the IRTA, we have conducted a study on the water requirements of the Canals d'Urgell irrigation system in response to the review of irrigation allocations proposed by the Ebro River Basin Authority. Commissioned by the General Irrigators' Community, the study analyses current and future water demand, taking into account irrigation modernisation and the effects of climate change. According to our estimates, water demand could increase by 11.2%, while crop productivity could rise by 11.1% if more efficient irrigation systems are employed. The study also considers scenarios up to 2040 and provides a scientific basis for ensuring that water management adapts to the future challenges facing the agricultural sector.

### Members of the Agrolabs Digitals project meet to review progress and set new goals

On 19 February, the IRTA Fruitcentre hosted the first annual meeting of Agrolabs Digitals, an initiative designed to advance the digitalisation of the agri-food sector. The meeting brought together representatives from the fourteen plant and animal production programmes involved, with the aim of coordinating efforts and accelerating implementation.

Our General Manager, Josep Usall, highlighted the cross-cutting nature of the project and its potential to transform the sector. During the event, Agrolabs Digitals' strategic lines were presented, based on spaces to test technology and a data and services platform, together with updates on eight key actions. The meeting helped establish priorities for advancing more efficient, digitalised production.



### Alternatives to maize with lower water requirements to ensure livestock feed production

Given water scarcity and the effects of climate change, we launched the SORGOFAR project to develop sustainable alternatives to maize, the most commonly used forage on many dairy farms. The aim is to ensure high-quality livestock feed using crops that require less water and are more resilient to drought.

As part of the project, we coordinate this operational group, bringing together cooperatives and organisations from the dairy sector that collaborate in the development and evaluation of new forage crops. We are also assessing summer crops such as forage sorghum, which offers high biomass production and strong regrowth capacity, as well as having low water requirements, making it a viable and efficient alternative to maize.





### The Tutti™ apple wins the Fresh Produce category at the Innovation Hub Awards during Fruit Attraction 2025

The Tutti™ apple variety, developed through the Hot Climate Partnership, in which the IRTA is involved, received the Innovation Hub Award 2025 in the Fresh Produce category during the international Fruit Attraction trade fair, held in Madrid from 30 September to 2 October. This award recognises the first apple specifically developed to thrive in warm climates. With more than 900 licensed hectares across several countries, Tutti™ continues to gain ground in international markets.



### More than 200 experts gather in Sant Feliu de Guíxols to advance genomics research into rosaceous crops

From 3 to 6 May, around 200 genomics scientists gathered in Sant Feliu de Guíxols (Girona) for the twelfth Rosaceae Conference, organised by the IRTA and the CRAG.

The goal of the conference was to strengthen the resilience of rosaceous crops to climate change, emerging pests and diseases.

The participants shared advances in pangenomics, biodiversity, resistance to abiotic and biotic stresses, breeding and fruit quality, alongside new digital technologies for the development of future crop varieties.

### AOSensor: promoting the use of artificial intelligence to ensure gazpacho is both top quality and sustainable

At the IRTA, we are collaborating with Ametller Origen and the Universitat Politècnica de Catalunya (UPC) on AOSensor, a project that combines artificial intelligence and advanced sensing technologies to ensure the quality and consistency of gazpacho.

We analyse thousands of tomatoes and peppers to measure pH, acidity, firmness and colour, while artificial intelligence predicts optimum ripeness. The system enables real-time production adjustments, reduces waste and improves process efficiency. It also helps accelerate the digitalisation of the agri-food sector.



### Investigating the use of seawater as an alternative to salt in processed plant-based products

A joint study by the IRTA and AQUAMARINA Costa Brava has demonstrated that seawater can partially replace common salt in processed plant-based products, reducing the sodium content by up to 50% without compromising sensory quality and actually improving the nutritional profile. The research was carried out at the IRTA's Fruitcentre in Lleida with support from ACCIÓ's Business Competitiveness Vouchers programme.

Trials involving pickled products, fermented foods, sofrito-style sauces, broths, pasta and bread showed that seawater preserves texture, flavour and colour while providing naturally occurring minerals. In pickled products, such as carrots, onions and broccoli, it improves firmness and helps maintain the chlorophyll's green colour. In fermented products, like kimchi and sauerkraut, consumer acceptance was high thanks to more appealing colour tones. Broths and pasta require less added salt, while bread, including gluten-free, retains its organoleptic properties when 50% of the water is replaced with seawater.

The results confirm the potential of seawater as an innovative ingredient that combines health, flavour and sustainability, opening up new opportunities for the Catalan food industry.



### The first parasitoids for the biological control of spotted wing drosophila released

At the end of September, we released the first *Ganaspis kimorum* individuals in plots located in Sant Pol de Mar (Barcelona). This parasitoid is highly specific to *Drosophila suzukii*, a pest that is very damaging to strawberry, cherry and other soft fruit crops, and it is difficult to control using insecticides. The project aims to establish this natural enemy as a sustainable biological control solution, reducing dependence on plant protection products.



## Implementing two biogas plants as a model for the circular economy

As part of the 2024–2027 Strategic Plan, we are promoting the construction of a new experimental biogas plant at the IRTA Mas Bové site (Tarragona) to support the transition towards more sustainable and self-sufficient livestock farming.

The facility will valorise the pig slurry and poultry manure generated in the centre's experimental farms through an anaerobic digestion process that converts these waste streams into biogas. The energy produced will be used primarily to heat the sow farrowing unit, reducing reliance on conventional energy sources.

The project will also enable the recovery of the digestate generated during the process: the solid fraction will be transformed into compost and organic fertilisers, while the liquid fraction will be reused for cleaning operations on the farms, reducing potable water use.

This initiative forms part of our commitment to promoting the bioeconomy and showcasing scalable solutions for the agri-food sector. In parallel, we are also developing a second biogas plant at the dairy farm in Monells (Girona), designed as a self-consumption model for small and medium-sized farms.



## A novel antibacterial technology developed to combat antimicrobial resistance

A research team has developed new antibacterial technology for biomedical devices that could help prevent hospital-acquired infections and combat antimicrobial resistance. This research builds on antibacterial molecules originally developed by the IRTA in the field of animal health, which have been successfully applied to chemically modify biomaterials used in medical implants.

The technology coats the surfaces of devices such as catheters and pacemakers with these antimicrobial molecules, preventing the formation of biofilms by multidrug-resistant bacteria, including *Pseudomonas aeruginosa*, methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-resistant *Staphylococcus epidermidis* (MRSE). This significantly reduces the risk of implant-associated infections while also improving the safety and durability of the devices.

The results, published in the journals *Pharmaceutics* and *ACS Applied Bio Materials*, highlight the potential of this technology as an alternative to antibiotics and underline the importance of scientific collaboration for addressing major global health challenges.



## IRTAmor® RAS technology boosts high-containment biological testing at HIPRA

The collaboration between the IRTA and HIPRA has been strengthened thanks to the installation of the IRTAmor® system, proprietary IRTA technology for high-containment biological testing that strengthens research into animal health. This milestone further reinforces a partnership focused on developing innovative biotechnology solutions.

IRTAmor® is a state-of-the-art recirculating aquaculture system (RAS), developed at the IRTA La Ràpita site, which ensures the precise control of testing conditions, animal welfare, and the efficient use of water and energy resources.

Developed in collaboration with INGESOM, the project exemplifies how the IRTA transforms scientific knowledge into applied solutions that create value for the agri-food sector and support a more sustainable bioeconomy.

## A Catalan consortium develops a system that uses insects to upcycle agricultural waste into fertilisers and animal feed

To manage agricultural waste more sustainably, we launched a project with the Conca de la Tordera Cooperative focused on rearing black soldier fly larvae to give plant residues a second life through biotechnology and the circular economy.

The system transforms agricultural surplus into compost for use as a fertiliser. Supported by ACCIÓ and developed in collaboration with the Federació Selmar, the initiative is scaling up the model so that at least half of the waste generated can be reused. This should also create new opportunities for the agricultural sector.





### The Ovihuec.dat project is recognised for its pioneering model promoting extensive livestock farming

The Ministry for Ecological Transition and the Demographic Challenge (MITECO) recognised the Ovihuec.dat project as one of the 39 flagship initiatives of the Spanish Government's Recovery, Transformation and Resilience Plan. Through this project, we promote extensive livestock farming as a tool for forest management, wildfire prevention, and rural development through municipally owned flocks. The award, which highlighted both the impact and replicability of the initiative, was collected by our researcher Montserrat Núñez at a ceremony held in Madrid in September.

### The IRTA-CReSA coordinates Catalonia's Scientific Committee on Lumpy Skin Disease (LSD)

In October, the IRTA-CReSA launched a scientific committee to strengthen surveillance and research into lumpy skin disease (LSD) after two cases were detected in Girona. We collected, isolated and sequenced the virus to determine its origin and improve epidemiological surveillance, in coordination with international teams. The committee then advised the Department of Agriculture, assessing, among other measures, the vaccination plan, which is key to containing the spread of this viral disease that affects only cattle.



### The LEVABENTOX project advances the study of marine microalgae along the Mediterranean coast

The IRTA is heading up the LEVABENTOX project, in collaboration with the Universidad Politécnica de Cartagena, to study the presence of benthic dinoflagellates on 15 beaches and in the Cabo Tiñoso Marine Reserve in the Murcia region. The initial results confirm the presence of *Ostreopsis*, a genus of algae that can cause irritation, coughing and fever, as well as *Gambierdiscus*, which is associated with the toxins responsible for ciguatera poisoning. The project's goal is to expand knowledge of these microorganisms and their potential risks to the marine environment, fisheries and public health.



### Bringing the 2025 Porc d'Or Awards to Guijuelo (Salamanca) and Lleida celebrating excellence in the sector

In 2025, we organised two gala events to recognise excellence in pig production. On 13 June, the 9th edition of the Porc d'Or Ibérico Awards was held in Guijuelo (Salamanca), hosting more than 400 professionals from across the sector. A total of 32 awards were presented to 22 farms, recognising their commitment to innovation, sustainability and excellence in Iberian pig production. These included five special awards, among them the Porc d'Or Ibérico Diamond Award.

On 24 October, Lleida hosted the 32nd Porc d'Or Awards Gala, focused on white-coated pig breeds and with more than 900 attendees. A total of 43 awards were presented, including special prizes for sustainability and animal health, with Galicia receiving the highest number of distinctions.

These two events highlighted the sector's achievements, the value of applied research, and the IRTA's contribution to ongoing improvement, innovation and sustainability in Spanish pig farming.



## Coordinating BLUEBOOST, a European project to promote more sustainable aquaculture

The IRTA is coordinating BLUEBOOST, a project supported by the Department of Agriculture. We are developing integrated multi-trophic aquaculture systems that combine fish, shellfish and algae with the aim of closing nutrient cycles, reducing waste and diversifying production.

The pilot project in La Ràpita is delivering promising results and contributing to both sustainability and ecosystem restoration. The project has been recognised by UNESCO and forms part of the United Nations Decade of Ocean Science for Sustainable Development.



## FOOD INDUSTRIES AREA



## Best-Date ranks among the top 20 innovations in the consumer goods sector

The Best-Date project, developed by the IRTA, was selected as one of the 20 best innovations of 2024 in the fast-moving consumer goods (FMCG) sector by the Consumer Goods Innovation Observatory, an initiative promoted by Institut Cerdà.

This tool helps manufacturers determine whether a product should carry a use-by date or a best-before date, providing greater clarity for consumers and helping reduce food waste. The selection was made after more than 350 innovative initiatives were evaluated.

Every year, tonnes of food that is still fit for consumption are discarded because of incorrect shelf-life identification. Best-Date provides a science-based solution that enables manufacturers to label products accurately and in compliance with current regulations, reducing waste while ensuring greater safety and clearer information for consumers.

This recognition in the 8th edition of the Observatory highlights how important research centres are for transforming the agri-food sector with more sustainable and efficient models.

Of the 20 selected projects, five were developed by R&D&I organisations, demonstrating the importance of research in driving innovation across the sector.

## Around 60 professionals explore food innovation at Monells

More than 60 professionals from a range of Catalan agri-food companies took part in an innovation event held in October at the IRTA Monells pilot plant for food and beverage processing.

The varied activities included tasting pâtés to identify a natural colourant developed by the IRTA, testing virtual reality headsets to analyse consumer behaviour, exploring food-safety tools, and learning how to calculate best-before dates to reduce food waste.

The event also featured a round-table discussion with representatives from Catalonia's five food-sector clusters: Foodretail, INNOVI, Food Service, INNOVACC and the Packaging Cluster.

Sara Bover, coordinator of the Food Industries Area, highlighted the importance of better communicating the centre's technological and training capabilities for addressing the sector's challenges and fostering new collaborations.



## The IRTA-CReSA works tirelessly to respond to the African swine fever (ASF) outbreak

At the end of November, 30 years after Spain was declared free of African swine fever (ASF), an outbreak of the disease was detected in wild boar in the Bellaterra area of Cerdanyola del Vallès (Barcelona). A surveillance and containment operation was immediately activated, in coordination with the Department of Agriculture and the Department of the Interior, to limit the spread of the disease.

Around 40 IRTA-CReSA staff members worked on detecting cases and disease-control measures as part of this operation. At the beginning of December, it was suggested that the outbreak might have originated in a laboratory. On 30 December, pending confirmation from the European Union Reference Laboratory, genome sequencing led by the IRB Barcelona revealed that the virus was a new variant, distinct from the strains known at the IRTA-CReSA. This crisis has underlined the need for high-biosecurity facilities and unique infrastructure capable of responding to health emergencies and supporting the One Health approach.



# DISSEMINATION IN THE SECTOR

2025 was a year of intense knowledge transfer activity, driven by our commitment to bringing research closer to the sector and supporting its practical application. Over the course of the year, **we ran more than 800 activities**, significantly more than the 655 held in 2024, and attracting more than 40,000 participants. Our registered user community also continued to grow, increasing from 14,700 users in 2024 to 16,100 in 2025.

We also participated in and organised key events that have become important meeting points for the sector. One example is the **30th Mollerussa Fruit Growing Conference**, which was attended by 1,700 participants.

In the field of animal production, the **meeting on sustainability in the agri-food sector**, focused on biogas production and digestate management, attracted 45 participants. Within the Food Industries Area, 67 people attended the event **Shared Challenges, Collaborative Solutions: Building the Future of the Food Industry**.

We also took part in **international trade fairs and conferences**, enabling us to take our research and innovation to new audiences while strengthening the IRTA's global profile.

Additionally, we reviewed and assessed the indicators provided by participants in our activities. Using the **Net Promoter Score (NPS)** as a reference, we achieved an overall score of:

# +64%

♥ NET PROMOTER SCORE (NPS) GLOBAL

## OUTSTANDING ACTIVITIES IN EACH AREA

👤 Attendees ♥ Net Promoter Score (NPS)



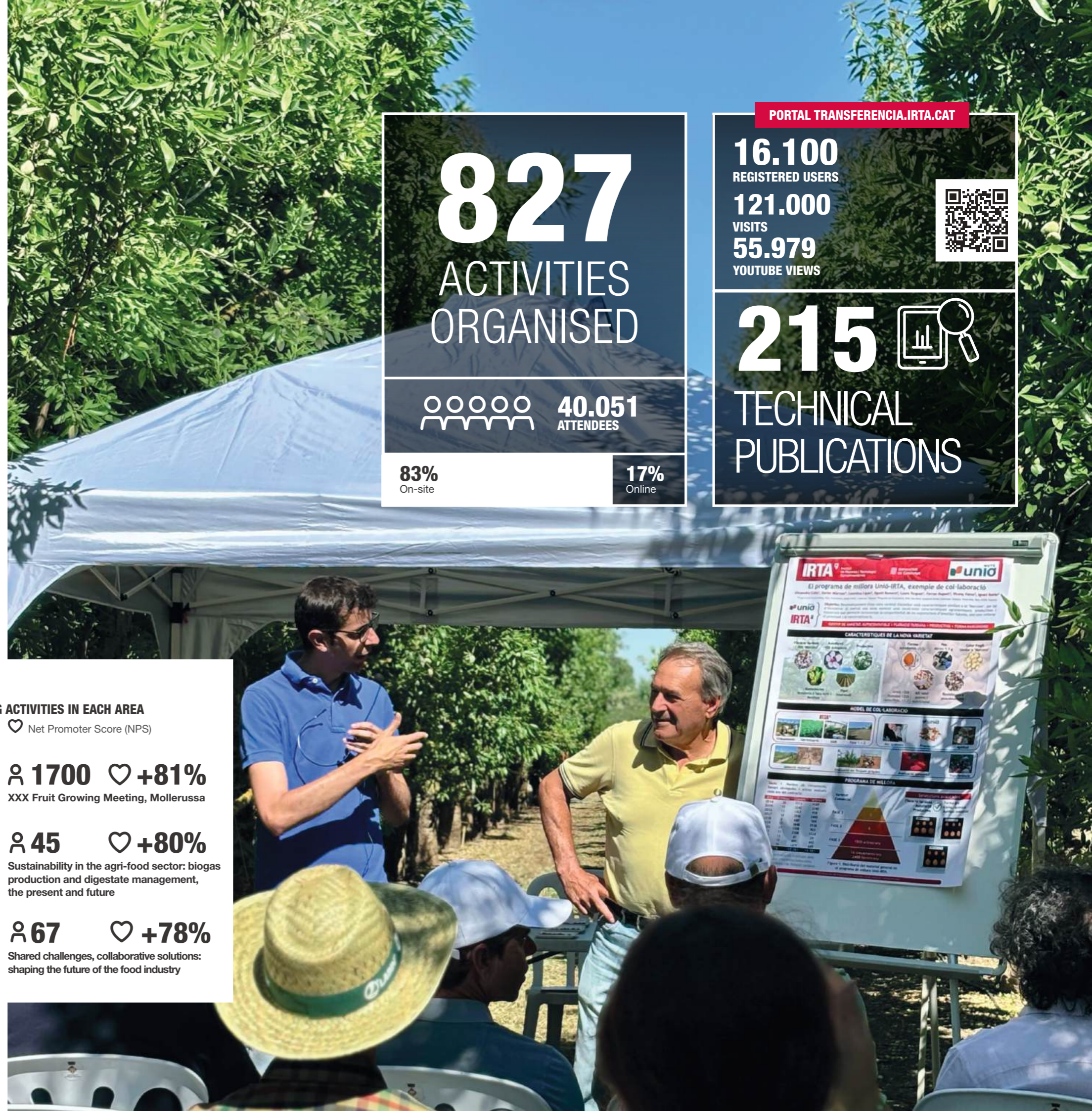
👤 **1700** ♥ **+81%**  
XXX Fruit Growing Meeting, Mollerussa



👤 **45** ♥ **+80%**  
Sustainability in the agri-food sector: biogas production and digestate management, the present and future



👤 **67** ♥ **+78%**  
Shared challenges, collaborative solutions: shaping the future of the food industry



**827**  
ACTIVITIES ORGANISED

👤👤👤👤👤 **40.051**  
ATTENDEES

**83%** On-site **17%** Online

PORTAL TRANSFERENCIA.IRTA.CAT

**16.100** REGISTERED USERS  
**121.000** VISITS  
**55.979** YOUTUBE VIEWS

**215** TECHNICAL PUBLICATIONS

**IRTA** **Unió**

El programa de millora Unió-IRTA, exemple de col·laboració

**CARACTERÍSTIQUES DE LA NOVA VARIETAT**

**MODEL DE COL·LABORACIÓ**

**PROGRAMA DE MILLORA**

## 500 international experts in meat science and technology gather in Girona to discuss the future of the sector

Between 3 and 8 August, we brought together 500 international experts in meat science and technology in Girona for the 71st edition of the International Congress of Meat Science and Technology (ICoMST), which we hosted at the Girona Conference Centre. The week began with keynote presentations on the role of animal production in food system sustainability and the impact of geopolitical tensions on the meat trade.

Under the slogan “Real meat, real care”, **we highlighted the value of high-quality, safe meat produced with respect for animal welfare, the environment and society.** Throughout the week, discussions focused on environmental sustainability, the most innovative industry trends, the relationship between animal welfare and product quality, and consumer preferences. We also organised visits to Catalan companies to showcase the region’s culture and heritage.

The opening session was attended by local and sector representatives, as well as our General Manager, Josep Usall, who highlighted the challenge of preserving tradition while continuing to research and innovate for a sustainable future. Louise Fresco, former Deputy Director-General of the FAO, emphasised the nutritional value of meat and the need to optimise resources.

Several IRTA researchers, including Ricard Bou, presented sustainable uses for meat co-products. The challenges of international trade and the need to ensure a skilled workforce were also addressed.

The congress concluded with a forward-looking perspective, highlighting the sector’s commitment to research, sustainability, and decision-making based on data and scientific evidence.



## Celebrating the 30th IRTA Fruit Growing Conference, a benchmark for innovation and knowledge transfer in Catalonia

In 2025, we celebrated the 30th edition of the IRTA Fruit Growing Conference in Mollerussa, the sector’s leading annual event for stone and pome fruit production, held at the Mollerussa experimental farm. Having been held for three decades, the conference has become a key forum for knowledge transfer and technological innovation in fruit growing, attracting around 1,500 professionals and 83 specialised companies.

This edition focused on reducing the main production costs facing the sector. Highlights included demonstrations of a fruit-picking robot, microsprinkler irrigation for frost protection as part of the MICROGEL project, and digital technologies such as variable-rate spraying and the new FruitMeasureApp, which uses artificial intelligence to measure fruit in the field.

We also presented advances in regenerative agriculture, efficient water management and the biological control of pests, such as pear psylla, as well as future challenges including the impact of climate change on fruit production.

As a prelude to the event, on 21 October we celebrated the conference’s 30th anniversary with representatives from the Department of Agriculture, Mollerussa Town Council, the Diputació de Lleida, and more than 100 companies and researchers associated with the event’s history.





# OUR NETWORK

2025

APRIL 4



On 4 April, we were appointed to the European Commission's Environmental Footprint Technical Advisory Board, reinforcing our position as a leading organisation in agri-food environmental assessment. This recognition highlighted our team's expertise in Life Cycle Assessment (LCA), a key discipline in the development of common European methodologies.

JULY 24



In July, we officially inaugurated the Restorative Aquaculture Demonstration Centre at the IRTA La Ràpita site, recognised by the FAO as a reference centre for the Mediterranean. During the event, we presented our work on sustainable aquaculture practices, aquatic ecosystem restoration and knowledge transfer to the sector. The centre also demonstrated its potential to generate social, economic and environmental benefits for local communities and to support the development of the blue economy in the region.

SEPTEMBER 23



On 23 and 24 September, we furthered our collaboration with the University of California to foster innovation in the agri-food sector and help adapt food systems to the challenges of climate change. Our delegation, accompanied by Minister Óscar Ordeig, visited companies and research centres to exchange knowledge on water management, digitalisation, crop production and resilience. This agreement allows us to exchange talent and projects while consolidating a strategic partnership to benefit farmers, consumers and communities in both Catalonia and California.

DECEMBER 4



A delegation from the IRTA, led by General Manager Josep Usall, Scientific Director Jordi Garcia-Mas and International Projects Promoter Pep Bantulà, visited INRAE in France to strengthen the bilateral partnership and identify new areas for collaboration. The meeting focused on governance, innovation, plant breeding, animal genetics and European projects, boosting the coordinated research approach to global challenges.

2026

FEBRUARY 24



In February, we welcomed a visit from Gerardo Marchesini, Director of Uruguay's National Institute of Agricultural Research (INIA), with the aim of strengthening collaboration between our two institutions and exploring new areas for joint work. During the visit, we presented a range of projects on animal production and sustainability, and toured the facilities of the Production of Ruminants and Sustainability in Biosystems programmes. The meeting helped identify areas of shared interest and find potential initiatives for future collaboration.

JULY 4



In July, the Diputació de Tarragona and the IRTA launched the "Aigua i avellaner" platform, a 10-hectare demonstration farm in Constantí (Tarragona) designed to help adapt hazelnut growing to climate change. The project is evaluating irrigation strategies using different water sources, more drought-resistant varieties, and technologies for monitoring water use. It also includes technical events and field visits to facilitate knowledge transfer to producers. The aim is to improve the sustainability, profitability and long-term viability of hazelnut cultivation in Catalonia.

SEPTEMBER 10



The HOT84A1 apple variety, marketed as Tutti™ and developed through the Hot Climate Partnership programme, in which the IRTA is a partner, continued its international expansion through a new agreement in China. The company Joy Wing Mau will plant 300 hectares of this warm-climate-adapted variety. The agreement, facilitated by VentureFruit, further strengthens the global presence of Tutti™ as the first high-temperature-resistant apple variety. Launched in 2023, this innovative variety is now grown in more than 900 licensed hectares across several countries and has become a key way to address climate change in the international fruit sector.

SEPTEMBER 16



In September, the IRTA management team travelled to Switzerland to visit Agroscope, the federal agricultural research organisation, as part of an institutional meeting aimed at strengthening international partnerships and exploring new avenues for scientific collaboration. The visit included meetings with Agroscope's managers and researchers, during which views were exchanged on governance models, funding mechanisms, and collaboration with institutions and businesses. Discussions also focused on cutting-edge research into innovative cropping systems, plant protection, wheat breeding, and horticultural and viticultural production. These exchanges helped strengthen the links between these European research centres, facilitate knowledge and experience sharing, and create new opportunities for joint projects, underlining the role of research as a driver of sustainability, competitiveness and resilience.

OCTOBER 16



On 16 October, we presented our strategy and future priorities to the President of the Generalitat, Salvador Illa, during his visit to the IRTA's corporate headquarters in Caldes de Montbui. We showcased several key infrastructures, including the new IRTA-CReSA biosecurity unit, dedicated to the study of emerging pathogens, and the future pig farm at Mas Bové, conceived as a pilot facility for innovation and sustainability. We also presented our plans for the experimental biogas plants that will generate energy and fertilisers from livestock manure. The visit provided an opportunity to highlight our research into global health and sustainability, as well as our international collaborations.

# COMMUNICATION TO SOCIETY

At the IRTA, we believe that research should be shared and made accessible to everyone, and we are committed to making the results of our work available to society. Open days, family activities, and initiatives involving children and young people help strengthen the connection between scientific research, the agri-food sector and society, while also encouraging critical thinking. Through these activities, we foster curiosity, debate and participation, helping to create a more informed, aware and prepared society capable of addressing future challenges in science, the environment and sustainable food systems.

## Girls and women scientists connect on the International Day of Women and Girls in Science

As part of the International Day of Women and Girls in Science, celebrated each year on 11 February, the IRTA took part in two initiatives designed to engage directly with schools and girls across the region and inspire future scientific vocations.

The #AgroCientífiques initiative, organised in collaboration with the Department of Agriculture, hosted researchers and students at the IRTA Agrònoms Plant Health Hub in Lleida to share experiences and reflect on the role of women in science.

In addition, 27 women scientists from the IRTA took part in the #científiques campaign, promoted by the Catalan Foundation for Research and Innovation and the Barcelona Institute of Science and Technology, giving talks in schools across the region to challenge stereotypes and introduce children to research.



## Connecting society with our research through two open days in Lleida and La Ràpita

More than 250 people attended the two open days organised in 2025, strengthening the connection between research and society.

On 22 September, the IRTA Fruitcentre took part in European Researchers' Night, offering guided tours and seven interactive workshops on topics including fruit quality, soils, fermentation processes, and 3D food printing. Children and adults actively took part in the experiments and received a Researcher's Card.

On 28 November, IRTA La Ràpita celebrated World Aquaculture Day, attracting around 150 participants. The event included outreach presentations, an experimental OpenLab and guided visits to the laboratories, showcasing how research contributes to sustainable aquaculture and the conservation of marine ecosystems.

## "Rita and the Best Bread in the World" builds on its success and receives a science outreach award

The science outreach project "Rita and the Best Bread in the World", promoted by the IRTA as part of the AgriRegenCat and AgriCarboniCat programmes, went from strength to strength in 2025, visiting schools, libraries and science venues across Catalonia. Aimed at children aged 6 to 8, the story introduces concepts including soil health, biodiversity, and regenerative agriculture in an engaging and accessible way.

Throughout the year, we visited schools across Catalonia to present the story to children. We also took part in an event organised by the Catalan Association of Food Sciences (Associació Catalana de Ciències de l'Alimentació; ACCA) at the Institut d'Estudis Catalans and ran practical workshops at the IRTA Monells site, where children discovered the wheat life cycle and learned how to make bread.

In September, the project received the 2nd Prize for Science Communication at the Gutenberg Awards, presented as part of the 15th Campus Gutenberg-CosmoCaixa Science Museum 2025, held in Barcelona.





### Vilamòs hosts the flagship event of the Ovihuec.dat project

In summer 2025, Vilamòs (Lleida) hosted the flagship event of the Ovihuec.dat project, featuring a public fair to actively engage local residents, particularly young people and families. Children’s workshops, guided tours, tastings of local products, live music and a dramatised visit introduced visitors to extensive livestock farming and science through a range of engaging, hands-on activities. The event strengthened community ties and highlighted the project’s contribution to the future of the Pyrenees.

### We participate in the educational programme “CientifiKs en joc”

The video game Marta’s Secret Laboratory, inspired by the research of Marta Pujol, a researcher in the IRTA–CRAG Genomics and Biotechnology programme, won the “CientifiKs en joc” competition organised by the Department of Research and Universities. Created by students from Fundació Escola Mowgli, the project is being further developed in collaboration with the University of Barcelona. This initiative promotes science outreach and highlights the role of women in science.



**202**  
NEWS ITEMS  
PUBLISHED  
ON THE WEB

**76**  
MEDIA  
AND PRESS  
RELEASES SENT

**138,500**  
VISITS TO THE WEBSITE  
**295,545**  
PAGES VISITED

**5,956**  
APPEARANCES  
IN THE MEDIA

**25**  
OUTREACH ACTIVITIES  
**1,500**  
ATTENDEES



OUR DIGITAL COMMUNITY CONTINUES TO GROW, PARTICULARLY ON INSTAGRAM AND LINKEDIN, WHICH HAVE BECOME KEY COMMUNICATION CHANNELS

## PONENT

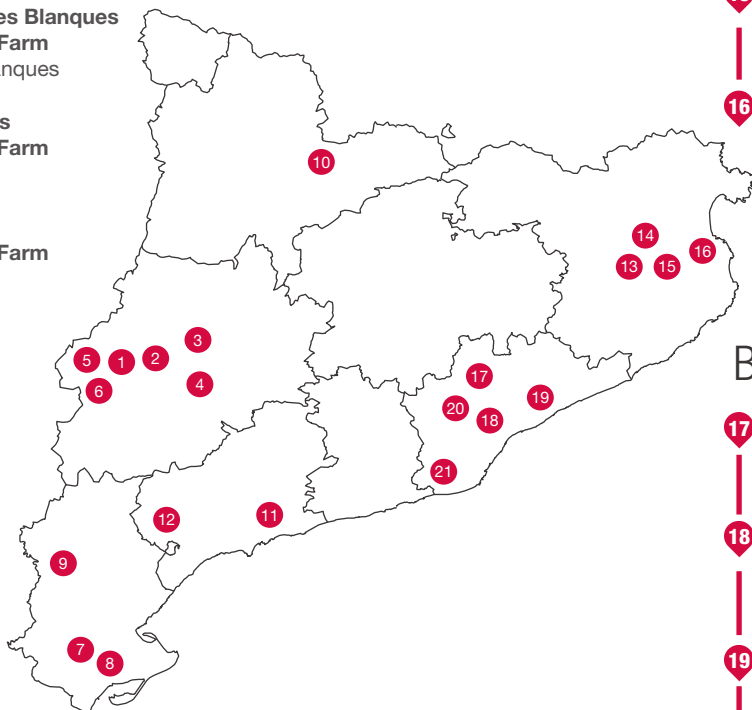
- 1 IRTA Fruitcentre Centre  
Lleida
- 2 IRTA Agronomists Centre  
Lleida
- 3 IRTA Mollerussa  
Experimental Farm  
Mollerussa
- 4 IRTA les Borges Blanques  
Experimental Farm  
Les Borges Blanques
- 5 IRTA Gimenezs  
Experimental Farm  
Gimenezs
- 6 IRTA Alcarràs  
Experimental Farm  
Alcarràs

## ALT PIRINEU AND ARAN

- 10 IRTA Pyrenees Centre  
La Seu d'Urgell

## COMARQUES GIRONINES

- 13 IRTA Monells Centre  
Monells
- 14 Pork Experimental  
Farms  
Monells
- 15 Experimental Dairy Farm  
(EVAM)  
Monells
- 16 IRTA Mas Badia Centre  
La Tallada d'Empordà



## TERRES DE L'EBRE

- 7 IRTA Amposta Centre  
Amposta
- 8 IRTA la Ràpita Centre  
La Ràpita
- 9 IRTA Gandesa  
Experimental Farm  
Gandesa

## CAMP DE TARRAGONA

- 11 IRTA Mas Bové Centre  
Constantí
- 12 IRTA VITEC Centre (underway)  
Falset

## BARCELONA

- 17 IRTA Torre Marimon  
(Corporate Headquarters)  
Caldes de Montbui
- 18 IRTA Research Centre for  
Animal Health (IRTA-CReSA)  
UAB Campus  
Cerdanyola del Vallès
- 19 IRTA Cabriels Centre  
Cabriels
- 20 Centre for Research in  
Agricultural Genomics  
(CRAG), Consortium Centre,  
UAB Campus  
Cerdanyola del Vallès
- 21 Research Centre for Agrofood  
Economics and Development  
Agroalimentario (CREDA)  
(CREDA), Consortium Centre,  
UPC Campus  
Castelldefels

LOCATIONS  
WHERE  
WE WORK

**IRTA**<sup>®</sup>



**Generalitat  
de Catalunya**

**IRTA**  
**Torre Marimon**

08140 Caldes de Montbui  
Barcelona  
934 674 040  
[www.irta.cat](http://www.irta.cat)

**CERCA**  
Centres de Recerca  
de Catalunya