



EXCornsEED

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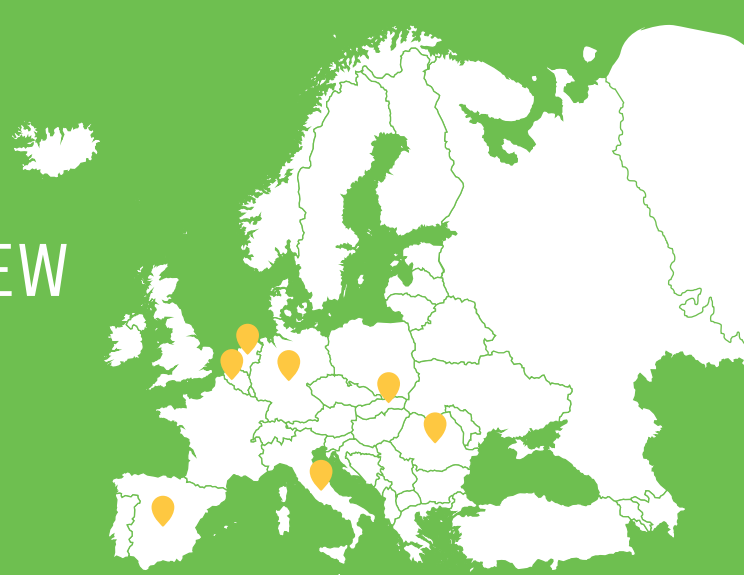
## WE INTRODUCE YOU THE RESEARCH ORGANIZATION IN OUR CONSORTIUM.

### Role of the research organizations in EXCornsEED project.

For a project like EXCornsEED, whose goal is the creation of new knowledge and innovative applications, the research activity is a really central topic. That's why we want to introduce you the research organizations that make our ideas come true. Here you can find a summary of the specific role of each one.

- **Sapienza University of Rome:** it has the coordination role. It's involved in the development of technological process and optimization of separation and fractionation of natural bioactive substances, but also in the participation for the upscaling and the demonstration for the ingredient quality assessment.
- **ICECHIM:** it develops analytical process of separation and purification of bioactive compounds, new products design.
- **CREA (Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria):** its task is the chemical characterization of raw materials/feedstock, crude extracts, purified fractions at laboratory, intermediate and pilot-scale levels. It's also responsible for the nutritional evaluation of final food products.
- **Tecnalia Research & Innovation:** it's involved in the life cycle assessment of valorisation processes and final products.

# ORGANIZATIONS OVERVIEW



## Sapienza University of Rome

Sapienza University of Rome is the biggest University in Europe. Its outstanding multidisciplinary nature gives the ability to deal with several issues related to the wide spread of human needs, as demonstrated by the high number of EU-funded projects where the university is involved.

The university is an associated member of [Bio Based Industries Consortium](#), consistently with the commitment shown towards some of the most important topics of the EXCornsEED project.

Talking about Sapienza activities in this sector, it has coordinated the EU-funded project “NoAW”, H2020-WASTE-2015-two-stage. The main topic of the project was about the production of high value added products such as carotenoids, polysaccharides or phenolic extracts from agro-industrial wastes.

Sapienza's mission perfectly fits the EXCornsEED one, as it also demonstrated by a Research Project funded by Sapienza University of Rome in 2012 showing that the technologies we usually use are based on environmental friendly mixtures of solvents or, preferably, tailored formulation of hydrolytic enzymes capable of degrading the vegetable matrix and enhance the extraction yields of targeted compounds.

Sapienza's focus on new routes for biofuels production has been well represented also in the coordinated EU-project “Biowalk4Biofuels” (FP7-ENERGY-2009-1).

As it is clear, Sapienza's researches aim to zero-waste industrial cycles, considering the research with the main stakeholders (coordinated EU-funded project “RES URBIS” in H2020-CIRC-2016OneStage) and process design & risk analysis of the developed new technologies (iNTeg-Risk in EU-funded project FP7-NMP-2007-LARGE-1).

This strong background will be exploited for the realization of the EXCornsEED project. The research, in fact, will include an experimental phase, aim to study the extraction procedure and the influence of the operating parameters on the extraction yields of selected bioactive compounds from the three side streams considered (corn oil, rapeseed meal, thin stillage). In particular, the extraction, enhanced by the tailored enzymatic mixtures, is one of the main processes that will be evaluated for the recovery of proteins, biopeptides and other value added compounds from rapeseed meal and thin stillage, while liquid to liquid solvent extraction and supercritical CO<sub>2</sub> will be studied as possible techniques to extract valuable green biochemicals from corn oil.

## **Icechim**

With a 60-years activity in applicative and fundamental research and five R&D Departments, ICECHIM is now one of the most important R&D institutes in Romania.

Great effort is spent in the renewable natural resources valorization, according to the strategic objectives at European level.

In the EXCornSEED project, the research institute will exploit project results as follows: formation and development of the competence of youth potential in the research profile, facilitating some stable professional positions for young researchers, formed as high level specialists who will have also the opportunity to have training stages and exchange of experience in the specific domain; promotion of the participation for research institutes at European programs and the integration of said institutes in the active international networks.

Moreover, ICECHIM has an important position in the Consortium because it has a strong research experience in the coordination of over 100 national and international projects in the scientific domains of chemistry, agrochemistry, bioresources, biocides, biofilms, biodegradable materials.

## **CREA (Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria)**

CREA, the leading Italian research organization entirely dedicated to the agri-food supply chains, is a legal entity under public law, supervised by the Ministry of Agricultural, Food, Forestry and Tourism Policies. Its scientific activities cover areas such as agricultural crops, livestock, fishery, forestry, agro-industry, food science and socio-economics.

CREA activities deal with the great challenges of the twenty-first century related to food production sustainability, following the principles of the circular, bio-based economy through a multidisciplinary approach.

The *Research Centre for Food and Nutrition*, located in Rome, is one of the 12 research Centres of CREA. With a multidisciplinary approach, the Centre carries out research and dissemination activities on food, their quality and their role in the maintenance of a good health status and in the prevention of nutrition-related diseases. The research activities are mainly focussed on compositional, nutritional and sensory studies also in relation to the production and processing technologies adopted. The research group on *Nutritional Quality of Food and Nutraceuticals*, participating to the EXCornSEED Project, has a consolidated experience on the nutritional quality evaluation of traditional and innovative food products of animal and plant origin. A non-exhaustive list of research topics dealt with by researchers participating to the project includes: food quality biomarkers with protective action on human health; sustainable sources of nutrients and bioactive molecules; valorisation of traditional and local products finalized to the obtainment of quality labels and organic certification; impact of different rearing/cultivation methods, post-harvest treatments and processing techniques on the quality and shelf-life of food products; nutritional adequacy of the Total Diet: assessment of the daily intake levels of nutrients and bioactive substances.

In the EXCornSEED project, CREA is involved in several tasks: chemical characterization of side streams; targeting of extractable bioactive and non-nutritive compounds; characterization of extracts and purified fractions at laboratory, intermediate and pilot-scale levels, nutritional evaluation of final food products.

## Tecnalia Research & Innovation

Tecnalia Research & Innovation is a private, independent and non-profit research organization. Legally a Foundation, Tecnalia is the leading private and independent research and technology organization in Spain and amongst the largest in Europe. It is associated member of Bio Based Industries Consortium and a key agent in the ERA – European Research Area.

Tecnalia is committed to generating major impacts in economic terms by means of innovation and technological development, addressed by 6 business divisions, covering the economic sectors of Energy and Environment, Industry and Transport, Sustainable Construction, Health, ICT and Technological Services. With their global presence, they aim to improve people's quality of life by generating business opportunities for companies.

One of the most central contributions from Tecnalia in the EXCornsEED project is that the company owns the license of SimaPro, one of the most widespread LCA software, which has been recently updated to its latest version. Also, this software tool includes one of the most complete LCI databases, Ecoinvent 3.3, which has been recently released. Thanks to this software, TECNALIA will conduct the LCA in order to determine the environmental impact of the proposed solution.

## KEEP INFORMED

If you want to learn more about the EXCornsEED project or get in touch with one of the EXCornsEED partners, please visit the EXCornsEED website or follow the project on Twitter and LinkedIn.

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