

Una manera de hacer Europa



BUENAS PRÁCTICAS

Actuaciones Cofinanciadas

Investment programme for foreign companies in R&D activities 2017. Extremadura

ICEX

**Programa Operativo
Plurirregional de España**

Año 2022

Fondo Europeo de Desarrollo Regional

INVESTMENT PROGRAMME FOR FOREIGN COMPANIES IN R&D ACTIVITIES 2017 REPORT ON BEST PRACTICES CO-FINANCED IN EXTREMADURA

ICEX has launched the INVEST IN SPAIN Programme to support R&D projects carried out by companies under foreign ownership that are already established or planning to set up in Spain.

The overall budget of the programme for Extremadura (2015-2019) is 2.2 million euros, of which the ERDF contribution is 469,107 euros. In Extremadura, ERDF assistance is essential to strengthen economic, social and territorial cohesion. **During the 2017 Call, thanks to the European Regional Development Fund, the two companies that we present as having established best practices have received grants for a total amount of 160,248.62 euros.**

On the one hand, **INGULADOS RESEARCH S.L.**, which has developed the R&D project “Effect of the administration of immunomodulating agents in pig farming”, the aim of which is to reduce the supply of antibiotics in order to improve the quality of meat intended for human consumption. On the other hand, **EXTRAPOLYMERS S.L.**, which has developed the R&D project "Research into technology for the chemical elimination of metals and PVC in PET containers and similar products" to improve recycling processes and reduce the volume of waste in landfill sites.

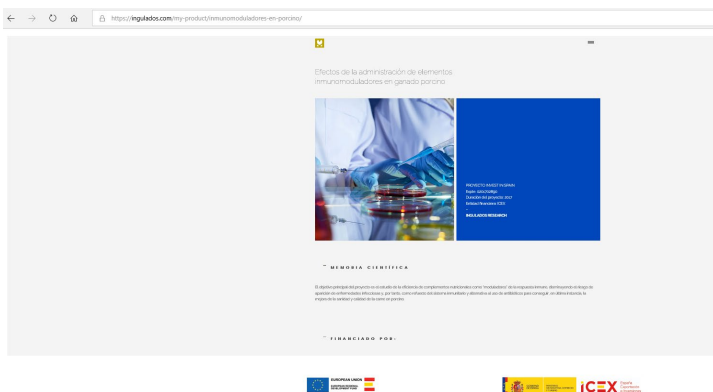
We consider these companies to have established best practices because they meet the following criteria:

1. High-level dissemination to beneficiaries and general public

Following the obligations of the regulation, the companies have indicated on their respective websites the details of the projects and the sources of funding. They have also put up information posters on their premises:

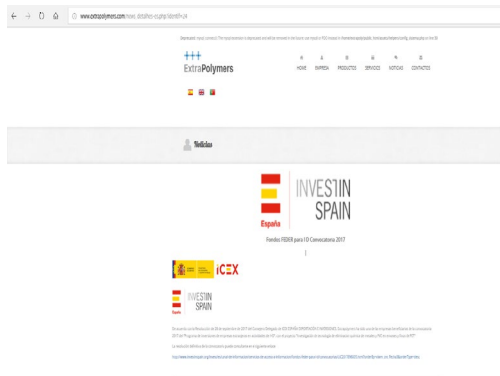
INGULADOS RESEARCH S.L.:

<https://ingulados.com/my-product/inmunomoduladores-en-porcino/>



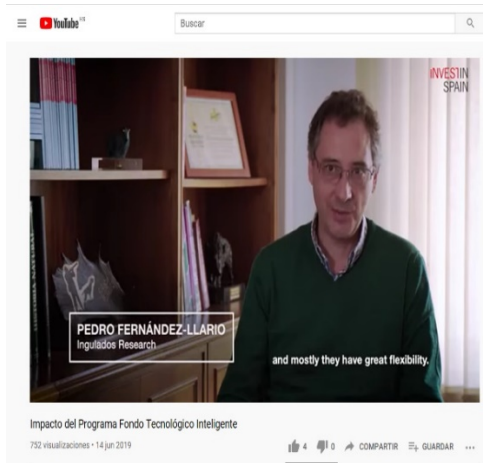
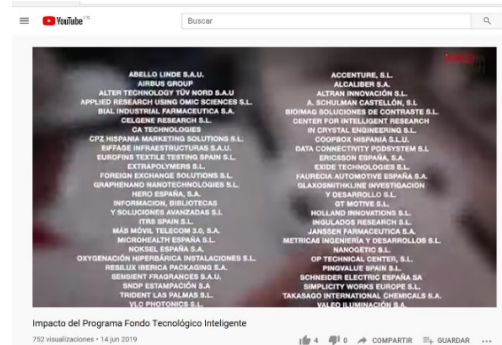
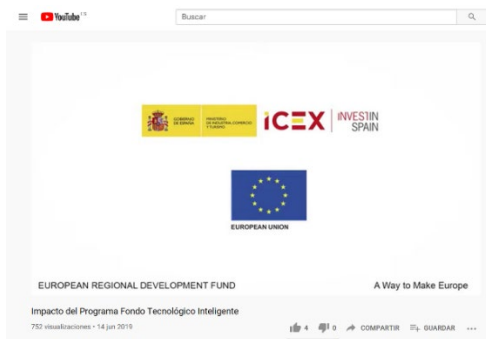
EXTRAPOLYMERS S.L:

http://www.extrapolymers.com/news_detalle-es.php?identif=24



The two companies are mentioned as examples of success in the ICEX promotional video "Impact of the Smart Technology Fund programme". Pedro Fernandez Llario, director of INGULADOS RESEARCH S.L., takes part in the video highlighting the importance of the financial support from ICEX & ERDF in order to carry out the project. The company expresses its appreciation on Twitter.

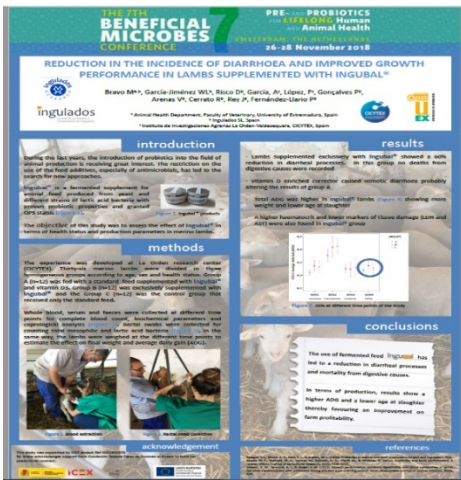
The video is available on Youtube at the following link: <https://www.youtube.com/watch?v=0aLJPOcSOrI> and has had 752 views to date.



The TV channel CanalExtremadura has made a report on the project of INGULADOS RESEARCH S.L. and has presented it in the regional prime-time news bulletins. The report, available at the link <https://www.canalextramadura.es/index.php/video/innovacion-y-desarrollo-con-ingulados>, indicates the results obtained and emphasises how essential ERDF co-financing has been for the development of the project.

INGULADOS RESEARCH S.L. has also participated in congresses and seminars, where it has presented the research project and the importance of the results, mentioning the support of ICEX & ERDF:

- ➔ “The 7th Beneficial Microbes Conference” Amsterdam, November 2018
- ➔ "6th ‘Retinta’ Breed Conference" Badajoz, October 2019



<https://ingulados.com/vi-jornadas-divulgativas-de-la-raza-retinta/>



The project developed by the company EXTRAPOLYMERS S.L. has received mentions in several local and national newspapers. In the reports the results achieved were mentioned, highlighting the importance of the support received from ICEX & ERDF.

<https://villafranca.hoy.es/noticias/201711/01/empresa-villafranca-resultado-beneficiaria-20171101212716.html>

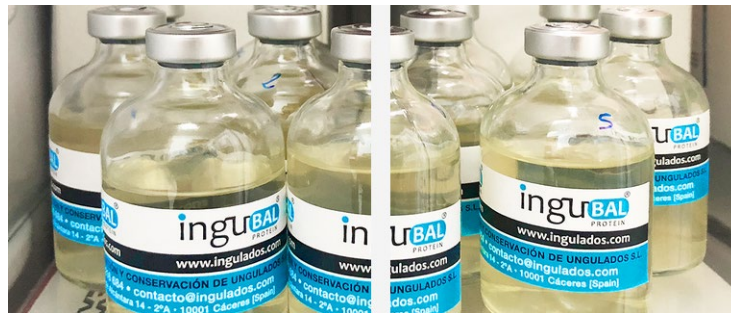
<http://www.extremadura7dias.com/noticia/el-programa-de-inversiones-en-id-del-icex-beneficia-a-dos-empresas-extremenas>

https://www.finanzas.com/macroeconomia/dos-empresas-extremenas-reciben-mas-de-160-000-euros-de-un-programa-de-i-d_13715425_102.html



2. The action incorporates innovative elements

The project developed by INGULADOS RESEARCH S.L. with the support of the ERDF offers a new, innovative approach to the traditional use of antibiotics in pig farming. Antibiotics are replaced by nutritional supplements specially developed to strengthen the immune system of pigs and boars, such as compound feeds with a high vitamin D3 content. A new protocol for the health management of pig farms is used to reduce the main risk of overuse of antibiotics: development of resistant strains for animals, which can spread to humans through the food chain.



Thanks to the support of ERDF, the company EXTRAPOLYMERS S.L. has been able to research new chemical methods that allow the incorporation of metal heat-sealed containers and the elimination of PVC from PET containers. The project is a first at international level, the new technologies and processes resulting from the research lead to a considerable improvement of the existing processes as there are no similar technological solutions in the industry, thus losing a significant volume of PET in the recycling facilities, which end up being sold as by-products, or, in the worst case scenario, as landfill.

This development is possible thanks to the incorporation of chemical techniques into the recycling industry's decontamination processes, as decontamination is currently carried out by means of physical processes of the contaminants, which prevents the use of a large part of the raw material, due to the impossibility of separating the contaminant from the PET.

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3. Adequacy of the results obtained to the objectives set.

The main objective of the R&D project developed by INGULADOS RESEARCH S.L. was to study the efficiency of nutritional supplements as "modulators" of the immune response, reducing the risk of the appearance of infectious diseases and, therefore, as a strengthening of the immune system and an alternative to the use of antibiotics. Analysis of the results obtained has shown that it is possible to reduce the use of antibiotics and improve production parameters; there have been lower morbidity and mortality rates and fewer injuries. It has also been possible to reduce costs related to livestock diseases, both the cost of treatment and mortality of individuals.

The project has been successful in improving the health and quality of pig meat.



The objectives of the EXTRAPOLYMERS S.L. project have been the research of new recycling technologies to obtain quality RPET, and the optimisation and design of machinery to incorporate more raw material to the recycling industry. Through the implementation of techniques and processes for the decontamination of PET, it is possible to increase the performance of the recycling processes and therefore increase the economic benefit of the companies, as it allows the recycling companies to increase their business volume, both nationally and internationally, and it is also possible to reduce landfill deposits, thus contributing to the conservation of the environment.

In the industrial test, a 60% "cleanliness" rate was achieved, with a target of 70% to 80%. For the company this is a good result, but for the industries it is not enough due to the cost of the process and solvents and therefore the company has not been able to patent the process.



4. Contribution to the resolution of a problem or weakness detected in the territorial area of implementation.

The INGULADOS RESEARCH S.L. project offers a viable and economical alternative to the use of antibiotics in pig farming. The widespread increase in the use of antibiotics is leading to the emergence and development of multidrug-resistant pathogenic bacterial strains with potential impact on human health, as these resistant strains can be spread to humans through the consumption of infected meat. Contamination of food with E. coli and salmonella, both of which are resistant to antimicrobials, is now common. Evidence of this problem can be found in the recent detection, in different countries, of resistance to colistin (polymyxin E), a widely used antibiotic. Two important vehicles of transmission of antibiotic resistance are through poultry and pork.

The study "Antimicrobial Resistance: Tackling a Crisis for the Health and Wealth of Nations" (commissioned in July 2014 by the UK Prime Minister) analyses the impact of the uncontrolled rise of drug resistance between now and 2050. The study concludes that, without effective action, drug-resistant strains (e.g. tuberculosis, malaria, and other bacterial infections) could lead to an estimated 10 million lives lost each year.

On the other hand, the R&D project by EXTAPOLYMERS S.L. has tried to develop new techniques for the purification of PET to solve the existing problem in the PET plastic packaging industry. The PET industry is currently booming, with the consumption of this plastic increasing all the time. In order to meet this high demand for PET, it is necessary to incorporate recycled PET (RPET) as a raw material into PET transformation plants, since at the same time as minimising pollutant emissions derived from the production of raw PET material, it also provides a solution to the need to reduce the volume of waste generated by today's consumer society. Due to the characteristics that RPET has to meet in order to be incorporated as a valuable raw material in the processing industry, between 20 and 40% of PET containers are discarded in recycling plants because of the difficulty of recycling them, due to the presence of other materials in them, which sometimes make the recycling processes economically unfeasible. The solution proposed by the EXTRAPOLYMERS S.L. project is to make recycling processes profitable and, at the same time, to contribute to sustainable development by eliminating landfill waste and optimising recycling methods.

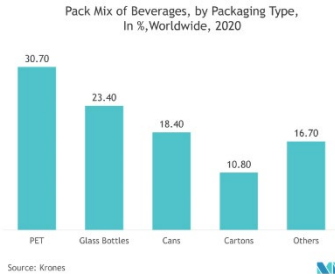


5. High degree of coverage of the target population

Both projects solve problems that affect a broad population.

Spain is the world's fourth largest pig meat producer, after China, the USA and Germany. The Spanish pig meat sector is of key importance in the Spanish economy and represents 12.7% of the Final Agricultural Production and 36.4% of the Final Livestock Production. It is estimated that approximately 55 kilograms of pork were consumed per capita in Spain. It is therefore essential to improve the quality of meat intended for human consumption.

The results obtained by INGULADOS RESEARCH S.L. allow an increase in the quality and health safety in livestock management, which is widely present and important in the region of Extremadura. Pigs, and the Iberian pig in particular, are, together with the ecosystem in which they grow (the meadow), one of the most important economic resources for the region. This ensures the interest of farmers in maintaining and increasing the quality of production on their farms, as well as the need for protection and the continuous improvement of these resources.



The EXTRAPOLYMERS S.L. project, for its part, offers a very wide coverage at national and international level, since PET, as can be seen in the following table, is currently the most widely used material for packaging, especially in the food, cosmetics, chemical and pharmaceutical industries. Its relevance is growing in the industrial context of increasing use of multi-layer PET packaging, a form of packaging that is becoming increasingly difficult to recycle. In addition, the action is oriented towards the benefit of environmental sustainability, both in terms of the conservation of raw materials and the management of waste, for the population as a whole. In fact, the European Union, through the European

Circular Economy Strategy for plastics, has set a target for 2030 for all plastic packaging distributed to be 100% recyclable, in a cost-effective way.

This is coupled with pressure from consumers who are increasingly demanding sustainable solutions and a reduction in the use of plastics in packaging.

Polyethylene Terephthalate, better known as PET, is a plastic material widely used in food packaging. "Recycled PET, or r-PET, made from post-consumer material is emerging as one of the most demanded solutions for sustainable food packaging, because of the existence of processes that make post-consumer PET a food contact material again".

6. Consideration of the cross-cutting criteria of equal opportunities and non-discrimination, as well as social responsibility and environmental sustainability.

The two companies promote equal opportunities for men and women, which is traditionally difficult to achieve in sectors with a high scientific and technological content. The number of female personnel involved in the

development of the projects is 50% of the staff, both in the case of INGULADOS RESEARCH S.L. and in the case of EXTRAPOLYMERS S.L.

In order to carry out its project, INGULADOS RESEARCH S.L. needed to collaborate with the technical area of Salbo Scientific LTD and the University of Extremadura. In this way, the project fulfils an important social responsibility, contributing to the maintenance of jobs with a high technological profile linked to the region of Extremadura. From the point of view of sustainability, INGULADOS RESEARCH S.L. together with its parent company INGULADOS S.L. offers a comprehensive consultancy service in the management of hunting, livestock or mixed farms to improve their productivity and sustainability, both in terms of nutrition and population control.



All the activity carried out by EXTRAPOLYMERS S.L. revolves around environmental sustainability. Through its project it offers a possible solution to the difficult recycling of plastic waste, supporting the conservation and improvement of the environment. The company has also collaborated with the University of Extremadura, thus promoting scientific and technological research in the region.



7. Synergies with other policies or instruments of public intervention

The INGULADOS RESEARCH S.L. project is aligned with the strategic objectives of the region, as stated in the Smart Growth Strategy (RIS3) of Extremadura, where biotechnology applied to veterinary medicine is identified as one of the areas with potential in the region, but still to be developed.

It also supports the development of the following strategic lines of action in the region:

- LC2. Development of a culture of innovation and entrepreneurship in Extremadura
- LT1. Talent attraction, development and retention
- LT2. Incorporation of human capital in R&D&I activities
- LE1. Fostering a highly competitive productive fabric

In addition, the project responds to issues of international concern about the rise of antibiotic resistance, as evidenced by some of the European Commission's R&D Framework Programme (Horizon 2020) lines identified as societal challenges:

- SFS-12-2016: Support for international research on animal health;
- SFS-46-2017: Alternative production system to address anti-microbial drug usage, animal welfare and the impact on health;
- SC1-HCO-04–2016: Towards globalisation of the Joint Programming Initiative on Antimicrobial resistance Specific Challenge.

The project developed by EXTRAPOLYMERS S.L. is in line with the priorities of the new Spanish Science and Technology and Innovation Strategy 2013-2020 and the EU H2020 Programme. This project supports the Green and Circular Economy Strategy for Extremadura - Extremadura 2030, whose main objectives are to turn the region into a model of innovation in the sustainable management of natural resources and to support the transformation of a traditional production model into a more diversified and sustainable model.



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