

# Postgraduate Diploma

## Development and Execution of R&D&I Projects in the Food Sector



## Postgraduate Diploma

### Development and Execution of R&D&I Projects in the Food Sector

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-development-execution-rdi-projects-food-sector](http://www.techtute.com/us/veterinary-medicine/postgraduate-diploma/postgraduate-diploma-development-execution-rdi-projects-food-sector)

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# 01

# Introduction

Innovation in the food sector is booming. New products and foods are becoming increasingly available to help us lead a healthier life, but we must be very familiar with all the processes to ensure that all health guarantees are met. There are increasingly more products that help us to lead a healthier life, but we must be aware of all of the processes to ensure that all healthcare concerns are covered.





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*The Development and Execution of R&D&I Projects in the Food Sector is one of the main areas of research. Don't miss the opportunity to specialize in this field"*

This Postgraduate Diploma presents R&D&I systems in the development of new foods and ingredients in different sectors of the food industry that require new technologies, new processes and food safety systems that are increasingly specific and adapted to the characteristics of new foods. In addition, the current research and development systems in the design and use of new ingredients are also presented, with special emphasis on the importance of preserving the food safety of these ingredients and of the foods in which they are used.

On the other hand, the economic support systems for the implementation of the projects, the legal conditions and, especially, the methodology for the operation of the projects in terms of planning, availability of resources, control and follow up are defined.

The adaptation to project work in the food environment is of great importance to carry out innovation, the development of new products or the improvement of food safety conditions and the use of food products and ingredients used. For this reason, this training has a special section for its study.

The Postgraduate Diploma in Development and Implementation of R&D&I Projects in the Food Sector of TECH Global University is the most complete among the postgraduate training offered in universities at this time because it is aimed at the comprehensive management of food safety.

This Postgraduate Diploma is taught by university professors and professionals from various disciplines in primary production, the use of analytical and instrumental techniques for quality control, the prevention of accidental and intentional contamination and fraud, food safety/food integrity and traceability (food defence and food fraud/food authenticity). They are experts in food legislation and regulations on quality and safety, validation of methodologies and processes, digitalization of quality management, research and development of new foods and finally, the coordination and execution of R&D&I projects.

It is an educational project committed to training high quality professionals. A program designed by professionals specialized in each specific subject who face new challenges every day.

This **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector** contains the most complete and up to date scientific program on the market. The most important features of the program include:

- ♦ The development of case studies presented by experts in veterinary food safety
- ♦ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ News on Development and Execution of R&D&I Projects in the Food Sector
- ♦ Practical exercises where the self assessment process can be carried out to improve learning
- ♦ His special emphasis on innovative methodologies in Development and Execution of R&D&I Projects in the Food Sector
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Do not miss the opportunity to do with us this Postgraduate Diploma in Development and Implementation of R&D&I Projects in the Food Sector. It's the perfect opportunity to advance your career"*



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*This Postgraduate Diploma is the best investment you can make in the selection of a refresher program to update your knowledge in Development and Execution of R&D&I Projects in the Food Sector"*

It includes, in its teaching staff, professionals belonging to the field of veterinary food safety, who pour into this training the experience of their work, in addition to recognized specialists from reference societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide immersive training programmed to train in real situations.

This program is designed around Problem Based Learning, where the specialist must try to solve the different professional practice situations that arise during the course. For this, the professional will be assisted by an innovative interactive video system created by recognized experts in Development and Execution of R&D&I Projects in the Food Sector and with great experience.

*We have the best didactic material and the most current educational methodology, which will allow you a contextual study that will facilitate your learning.*

*This 100% online Postgraduate Diploma will allow you to combine your studies with your professional work. You can study whenever you want from any device with an internet connection.*



# 02 Objectives

The Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector is oriented to facilitate the professional's performance with the latest and most innovative advances in the sector.





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*This is the best option to learn about the latest advances in the Development and Execution of R&D&I Projects in the Food Sector”*



## General Objectives

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- ♦ Analyze the principles of food legislation, at national and international level, and its evolution up to the present day
- ♦ Analyze the competencies in food legislation to develop the corresponding functions in the food industry
- ♦ Evaluating food industry procedures and mechanisms of action
- ♦ Develop the basis for applying legislation to the development of food industry products
- ♦ Establish R&D&I systems that enable the development of new foods and ingredients, especially in food safety issues, so that they can address research, development and innovation in this field
- ♦ Develop knowledge that provides a basis or opportunity for the development and or application of ideas, in a research context, including reflections on the responsibilities linked to the application of their developments
- ♦ Determine the functioning of R&D&I systems in the field of new product and process development in the food environment
- ♦ Analyze the R&D&I system and the use of tools for planning, management, evaluation, protection of results and dissemination of food R&D&I
- ♦ Develop knowledge that provides a foundation or opportunity for the development and or application of ideas, in a research context, including reflections on the responsibilities associated with the application of their developments





## Specific Objectives

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### Module 1.

- ♦ Define the Fundamentals of Food Law
- ♦ Describe and develop the main international, European and national organizations in the field of food safety, as well as determine their competencies
- ♦ Analyze the food safety policy in the European and Spanish frameworks
- ♦ Describe the principles, requirements and measures of food legislation
- ♦ Explain the European legislative framework regulating the food industry
- ♦ Identify and define the responsibility of the participants in the food chain.
- ♦ Classify the types of liability and offenses in the field of food safety
- ♦ Developing the criteria for horizontal legislation in Spain
- ♦ Develop vertical legislation criteria in Spain

### Module 2.

- ♦ Establish new trends in food technologies that give rise to the development of a line of research and implementation of new products in the market
- ♦ Establish the fundamentals of the most innovative technologies that require research and development work to understand their potential for use in the production of new foods and ingredients
- ♦ Design research and development protocols for the incorporation of functional ingredients to a base food, taking into account its techno-functional properties, as well as the technological process involved in its elaboration
- ♦ Compile new trends in food technologies that will lead to the development of a line of research and implementation of new products in the market
- ♦ Apply research and development methodologies to evaluate the functionality, bioavailability and bioaccessibility of novel foods and ingredients

### Module 3.

- ♦ Establish R&D&I systems that enable the development of novel foods and ingredients especially in food safety issues, so that they can address research, development and innovation in the field of novel foods and ingredients
- ♦ Compile the sources of financing for R&D&I activities in the development of new food products that allow different innovation strategies in the food industry to be addressed
- ♦ Analyze the forms of access to public and private sources of information in the scientific technical, economic and legal fields for the planning of an R&D&I project
- ♦ Develop methodologies for project planning and management, control reporting and monitoring of results
- ♦ Evaluate the technology transfer systems that allow the transfer of R&D&I results to the productive environment
- ♦ Analyze the implementation of projects once their documentation stage has been completed



*A unique, key, and decisive training experience to boost your professional development”*



03

# Course Management

The program includes in its teaching staff leading experts in Veterinary Food Safety who bring to this training the experience of their work. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.





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*The main professionals in the field have come together to show you the main novelties in Development and Execution of R&D&I Projects in the Food Sector”*



## Management



### Dr. Limón Garduza, Rocío Ivonne

- ♦ PhD in Agricultural Chemistry and Bromatology (Autonomous University of Madrid)
- ♦ Master's Degree in Food Biotechnology (MBTA) (University of Oviedo)
- ♦ Food Engineer, Bachelor's Degree in Food Science, and Technology (CYTA)
- ♦ Expert in Food Quality Management ISO 22000
- ♦ Specialist in Food Quality and Safety, Mercamadrid Training Center (CFM)



## Professors

### **Dr. Colina Coca, Clara**

- ◆ D. in Nutrition, Food Science and Technology
- ◆ Master's Degree in Food Quality and Safety: HACCP system
- ◆ Postgraduate in Sports Nutrition
- ◆ Collaborating professor at the UOC. Since 2018

### **Dr. Martínez López, Sara**

- ◆ D. in Pharmacy (Universidad Complutense de Madrid)
- ◆ Degree in Chemistry (University of Murcia)
- ◆ Assistant Professor of Nutrition and Food Technology at the European University of Madrid
- ◆ Researcher in the research group "Microbiota, Food and Health". European University of Madrid

### **Dr. Rendueles de la Vega, Manuel**

- ◆ D. in Chemical Engineering, Professor of Chemical Engineering (University of Oviedo)
- ◆ Coordinator of the Master in Food Biotechnology at the University of Oviedo since 2013
- ◆ Principal investigator in three projects of the National R&D Plan. Since 2004

# 04

# Structure and Content

The content structure has been designed by the best professionals in the sector, with extensive experience and recognized prestige in the profession, backed by the volume of cases reviewed, studied and diagnosed, and with extensive knowledge of new technologies applied to food safety.





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*We have the most complete and up to date academic program in the market. We strive for excellence and for you to achieve it too"*

## Module 1. Food Legislation and Quality and Safety Standards

- 1.1. Introduction
  - 1.1.1. Legal Organization
  - 1.1.2. Basic Concepts
    - 1.1.2.1. Law
    - 1.1.2.2. Legislation
    - 1.1.2.3. Food Legislation
    - 1.1.2.4. Standard
    - 1.1.2.5. Royal Decree
    - 1.1.2.6. Certifications, etc
- 1.2. International Food Legislation. International Organizations
  - 1.2.1. Food and Agriculture Organization of the United Nations (FAO)
  - 1.2.2. World Health Organisation (WHO)
  - 1.2.3. Codex Alimentarius Commission
  - 1.2.4. World Trade Organization
- 1.3. European Food Legislation
  - 1.3.1. European Food Legislation
  - 1.3.2. White Paper on Food Safety
  - 1.3.3. Principles of Food Legislation
  - 1.3.4. General Requirements of Food Legislation
  - 1.3.5. Procedures
  - 1.3.6. European Food Safety Authority (EFSA)
- 1.4. Spanish Food Legislation
  - 1.4.1. Skills
  - 1.4.2. Organizations
- 1.5. Food Safety Management in the company
  - 1.5.1. Responsibilities
  - 1.5.2. Authorization
  - 1.5.3. Certifications
- 1.6. Horizontal Food Legislation. Part 1:
  - 1.6.1. General Hygiene Regulations
  - 1.6.2. Water for Public Consumption
  - 1.6.3. Official Control of Foodstuffs
- 1.7. Horizontal Food Legislation. Part 2:
  - 1.7.1. Storage, Preservation and Transportation
  - 1.7.2. Materials in Contact with Food
  - 1.7.3. Food Additives and Flavorings
  - 1.7.4. Contaminants in Food
- 1.8. Vertical Food Legislation: Products of Plant Origin
  - 1.8.1. Vegetables and By Products
  - 1.8.2. Fruits and Derivatives
  - 1.8.3. Cereals
  - 1.8.4. Legumes
  - 1.8.5. Edible Vegetable Oils
  - 1.8.6. Edible Fats
  - 1.8.7. Seasonings and Spices
- 1.9. Vertical Food Legislation: Animal Products
  - 1.9.1. Meat and Meat Derivatives
  - 1.9.2. Fish Products
  - 1.9.3. Milk and Dairy Products
  - 1.9.4. Eggs and Egg Products
- 1.10 Vertical Food Legislation: Other Products
  - 1.10.1. Stimulant Foods and Derivatives
  - 1.10.2. Beverages
  - 1.10.3. Prepared Dishes





## Module 2. R&D&I of Novel Foods and Ingredients

- 2.1. New Trends in Food Product Processing
  - 2.1.1. Design of Functional Foods Aimed at Improving Specific Physiological Functions
  - 2.1.2. Innovation and New Trends in the Design of Functional Foods and Nutraceuticals
- 2.2. Technologies and Tools for Isolation, Enrichment, and Purification of Functional Ingredients from Different Starting Materials
  - 2.2.1. Chemical Properties
  - 2.2.2. Sensory Properties
- 2.3. Procedures and Equipment for the Incorporation of Functional Ingredients into the Base Feed
  - 2.3.1. Formulation of Functional Foods According to Their Chemical and Sensory Properties, Caloric Value, etc.
  - 2.3.2. Stabilization of Bioactive Ingredients from Formulation
  - 2.3.3. Dosage
- 2.4. Gastronomy Research
  - 2.4.1. Texture
  - 2.4.2. Viscosity and Flavor. Thickeners Used in Nouvelle Cuisine
  - 2.4.3. Gelling Agents
  - 2.4.4. Emulsions
- 2.5. Innovation and New Trends in the Design of Functional Foods and Nutraceuticals
  - 2.5.1. Design of Functional Foods Aimed at Improving Specific Physiological Functions
  - 2.5.2. Practical Applications of Functional Food Design
- 2.6. Specific Formulation of Bioactive Compounds
  - 2.6.1. Flavonoid Transformation in the Formulation of Functional Foods
  - 2.6.2. Bioavailability Studies of Phenolic Compounds
  - 2.6.3. Antioxidants in the Formulation of Functional Foods
  - 2.6.4. Preservation of Antioxidant Stability in Functional Food Design
- 2.7. Design of Low Sugar and Low Fat Products
  - 2.7.1. Development of Low Sugar Products
  - 2.7.2. Low fat Products
  - 2.7.3. Strategies for the Synthesis of Structured Lipids

- 2.8. Processes for the Development of New Food Ingredients
  - 2.8.1. Advanced Processes for Obtaining Food Ingredients with Industrial Application: Micronization and Microencapsulation Technologies
  - 2.8.2. Supercritical and Clean Technologies
  - 2.8.3. Enzymatic Technology for the Production of Novel Food Ingredients
  - 2.8.4. Biotechnological Production of Novel Food Ingredients
- 2.9. New Food Ingredients of Plant and Animal Origin
  - 2.9.1. Trends in R&D&I Developments in New Ingredients
  - 2.9.2. Applications of Plant Based Ingredients
  - 2.9.3. Applications of Ingredients of Animal Origin
- 2.10. Research and Improvement of Labeling and Preservation Systems
  - 2.10.1. Labeling Requirements
  - 2.10.2. New Conservation Systems
  - 2.10.3. Validation of Health Claims

### Module 3. Food Safety Certifications for the Food Industry

- 3.1. Innovation and Competitiveness in the Food Industry
  - 3.1.1. Analysis of the Food Sector
  - 3.1.2. Innovation in Processes, Products and Management
  - 3.1.3. Regulatory Conditions for the Marketing of Novel Foods
- 3.2. The R&D System
  - 3.2.1. Public Investigation and Private Investigation
  - 3.2.2. Regional and Local Business Support Plans
  - 3.2.3. National R&D&I Plans
  - 3.2.4. International Programs
  - 3.2.5. Research Promotion Organizations

- 3.3. R&D&I Projects
  - 3.3.1. R&D&I Aid Programs
  - 3.3.2. Types of Projects
  - 3.3.3. Types of Financing
  - 3.3.4. Project Evaluation, Monitoring and Control
- 3.4. Scientific and Technological Production
  - 3.4.1. Publication, Dissemination and Diffusion of Research Results
  - 3.4.2. Basic Research/Applied Research
  - 3.4.3. Private Sources of Information
- 3.5. Technology Transfer
  - 3.5.1. Protection of Industrial Property. Patents
  - 3.5.2. Regulatory Constraints on Transfers in the Food Sector
  - 3.5.3. *European Food Safety Authority* (EFSA)
  - 3.5.4. *Food and Drug Administration* (FDA)
  - 3.5.5. National Organizations. Example: Spanish Agency for Food Safety and Nutrition (AESAN)
- 3.6. Planning of R&D&I Projects
  - 3.6.1. Work Decomposition Scheme
  - 3.6.2. Resource Allocation
  - 3.6.3. Priority of Tasks
  - 3.6.4. Gantt Chart Method
  - 3.6.5. Digitally Supported Planning Methods and Systems
- 3.7. Documentary Development of R&D&I Projects
  - 3.7.1. Prior Studies
  - 3.7.2. Delivery of Progress Reports
  - 3.7.3. Development of the Project Report



- 3.8. Project Execution
  - 3.8.1. Checklist
  - 3.8.2. Deliverables
  - 3.8.3. Project Progress Control
- 3.9. Project Delivery and Validation
  - 3.9.1. ISO Standards for the Management of R&D&I Projects
  - 3.9.2. Completion of the Project Phase
  - 3.9.3. Analysis of Results and Feasibility
- 3.10. Implementation of R&D&I Projects Developed by the Company
  - 3.10.1. Purchase Management
  - 3.10.2. Supplier Validation
  - 3.10.3. Project Validation and Verification

“ *This training will allow you to advance in your career comfortably*”

05

# Methodology

This training program offers a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.







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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*



## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the actual conditions in a veterinarian's professional practice.

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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method.*

The effectiveness of the method is justified by four fundamental achievements:

1. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the time dedicated to working on the course.



## Relearning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Veterinarians will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*





At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology more than 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



### Interactive Summaries

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".

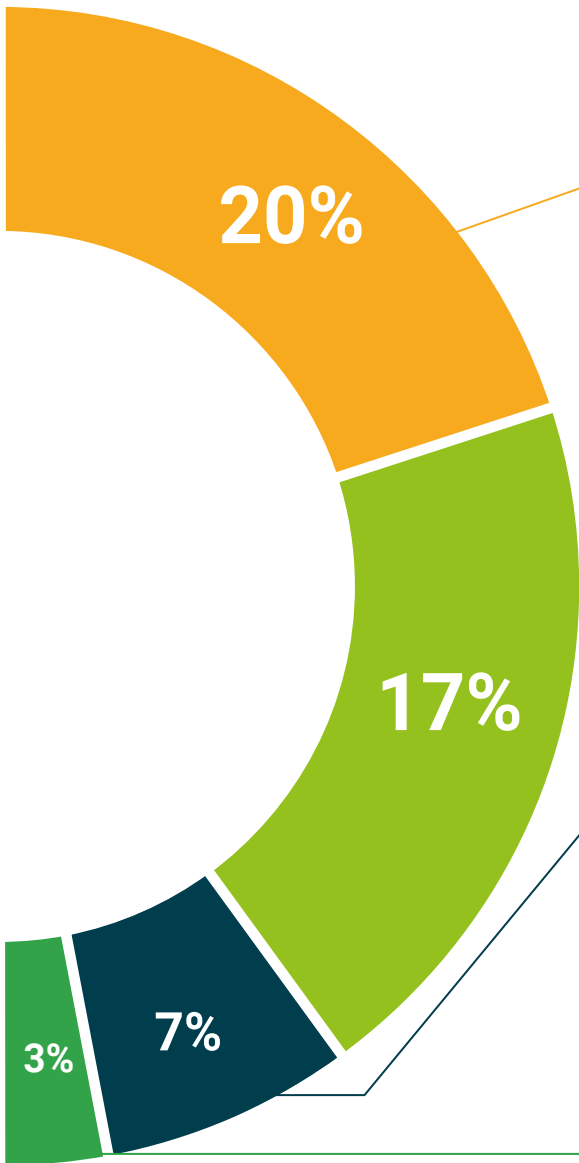


### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.







**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises: so that they can see how they are achieving your goals.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

# Certificate

The Postgraduate Diploma in Quality Control in Food Industries guarantees, in addition to the most rigorous and up to date training, access to a Postgraduate Diploma issued by TECH Global University.



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*Successfully complete this training and receive your university degree without travel or laborious paperwork”*

This program will allow you to obtain your **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector**, endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Development and Execution of R&D&I Projects in the Food Sector**.

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.





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of R&D&I Projects in the  
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## Development and Execution of R&D&I Projects in the Food Sector

