

At the forefront of healthy, safe, and sustainable food - for the benefit of society

In its capacity as an adviser, the National Food Institute helps public authorities and businesses provide consumers with good health and safe food. Innovation paves the way for new, value-creating solutions for businesses. Education disseminates experience worldwide. And world-class research forms the basis of new solutions to global problems.

"For the benefit of society! Those were the words uttered by the Danish physicist H.C. Ørsted back in 1829 when DTU was founded. Today, 190 years later, those words still characterize the National Food Institute on the occasion of our 60th anniversary," Director of Institute Christine Nellemann says.

The chronology of the Institute formally started when the law on a food institute etc. was adopted on 5 June 1959. In a report six years earlier, the Danish Health Authority had proposed to establish a central national institute that would perform several tasks.

By means of chemical analyses, the Institute was to observe the occurrence of nutrients and unwanted substances in foods. Several incidences from that time had created an awareness of the increasing use of chemical substances, such as giving antimicrobials to fish, hormonal castration of chickens, using pesticides to exterminate rodents, and adding new preservatives and sweeteners to foods.

According to the report from the Danish Health Authority, the Institute was tasked with assessing how chemical substances affected the health of food. A documentation service was tasked with collecting and communicating knowledge to consumers. Finally, dietary surveys and advice on the composition of the diet was part of the original bill proposal.

Through the years, the Institute has had many names, and its tasks have been characterized by the changing needs of society. Since it was established, genetically modified organisms, dietary habits, and lifestyle diseases have also come under the spotlight. In addition, new focus areas have been added at the Institute: endocrine disruptors, food microbiology, epidemiology, and food technology.



The National Vitamin Laboratory, whose history goes back to 1931, was in 1969 merged with the National Food Institute of the time, which is one of the precursors of the present National Food Institute.

Chemical laboratory at the National Vitamin Laboratory circa 1940.
National Food Institute



The National Food Institute has at its disposal approximately 6,700 m² chemical laboratories, food technological laboratories, microbiological laboratories, laboratories for effect studies, and animal testing facilities.

Laboratory for research in the area of microbial biotechnology and biorefinery in Building 202.
Mikal Schlosser

Affiliations of the past

- parts of the Institute are more than 60 years old

The National Food Institute has adapted to changing ministries, governments, and framework conditions many times. Today, the Institute is part of DTU (Technical University of Denmark) and falls under the Ministry of Higher Education and Science. Previously, the Institute has fallen under the Ministry of the Interior, the Ministry of Environment, the Ministry of Health, the Ministry of Food, and the Ministry of Families.

In the course of time, the Institute has had its professional origin in several organizations, both smaller and larger than the Institute's current size: E.g. the National Vitamin Laboratory, the National Pesticide Laboratory, the National Food Institute (Statens Levnedsmiddelinstitut), the National Food Agency, the Danish Veterinary and Food Administration, the Food Directorate, and the Danish Institute for Food and Veterinary Research.

Over the years, mergers have led to the addition of new research areas. When the Danish Institute for Food and Veterinary Research was established in 2004, the Food Directorate's Institute for Food Safety merged with the National Veterinary Institute. A large part of the professional activities at the National Food Institute within zoonoses and epidemiology originates from the National Veterinary Institute, which was founded in 1908 and is thus more than 110 years old today.

Thanks to the merger with DTU, food technology became a new research area in 2007, when a unit from DTU Bioengineering became part of the Institute. The past history of this part also dates back more than 110 years to 1906.



For more than 50 years, Mørkhøj Bygade in Søborg was home to the majority of the National Food Institute's activities.

 Building C in Mørkhøj. National Food Institute



In 2017, the National Food Institute gathered all of its activities at DTU's Lyngby campus. Most staff members are located in a new building complex in Buildings 201-205B, which features state-of-the-art facilities.

 Building 202. Adam Mørk

Risk assessment and risk management are clearly separated

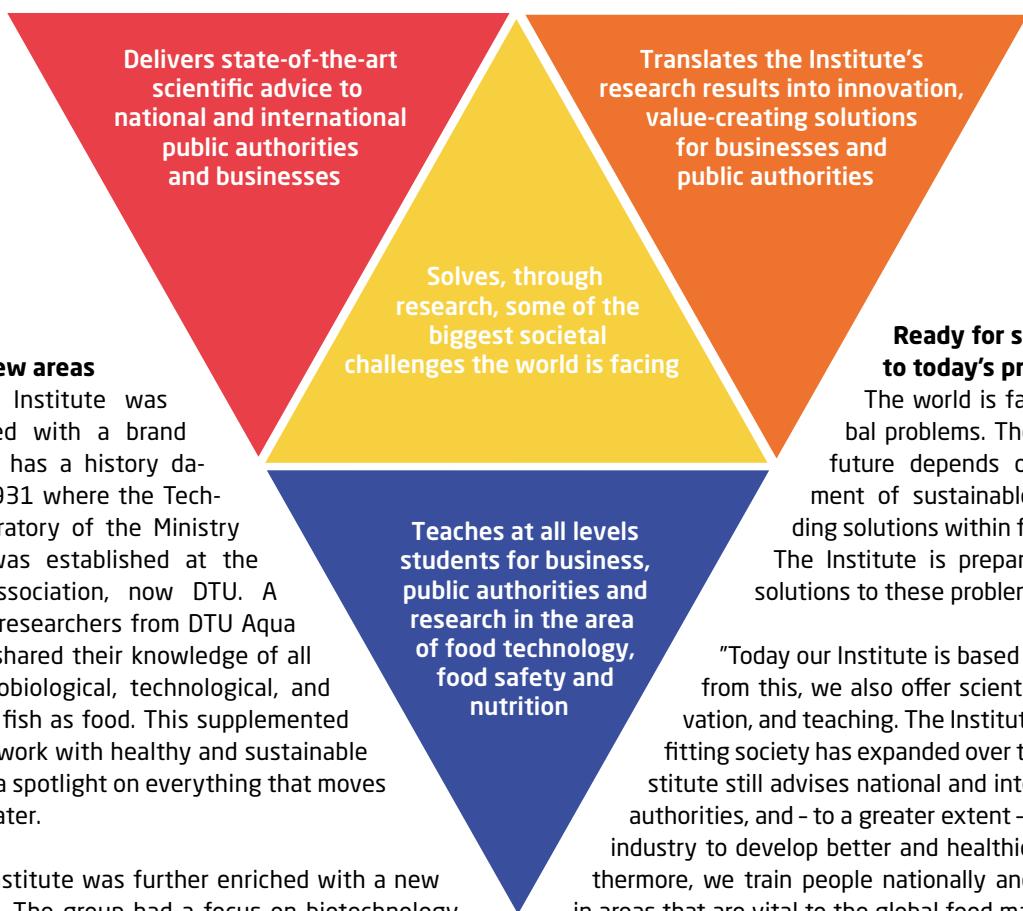
Through the 1990s, the importance of separating statutory responsibilities from advice-giving and research activities was at the centre of debate. Among other things, the debate was based on a case related to bovine spongiform encephalopathy, BSE. This case showed the need for a clear separation between those who scientifically assess a risk and those who are going to make political decisions on how to manage the risk.

In order to separate risk assessment from risk management, the Institute for Food Safety and Nutrition merged with the

National Veterinary Institute in 2004 - and the Danish Institute for Food and Veterinary Research was born.

When the Danish Institute for Food and Veterinary Research merged into DTU, risk assessment was embedded in the Ministry of Science of the time. Thus, Denmark achieved the greatest separation between the two activities seen on a global basis, until now. Therefore, the National Food Institute is also a global pioneer within this area.

The tasks of the National Food Institute



"Today our Institute is based on research, and from this, we also offer scientific advice, innovation, and teaching. The Institute's way of benefitting society has expanded over the years. The Institute still advises national and international public authorities, and - to a greater extent - it also helps the industry to develop better and healthier products. Furthermore, we train people nationally and internationally in areas that are vital to the global food market: food technology, food safety, and nutrition," Christine Nellemann says.

Part of the university environment

The merger with DTU in 2007 was a turning point in the Institute's history. Being an active player in the university environment offers new ways of using the Institute's qualifications and skills. With an engineering degree from DTU in the area of foods, you can conduct research, work in a food company on the development of healthy, sustainable products, or you can work for a public authority. The degree programmes cover the entire spectrum, from large general practices to small practical things, such as how to clean production machines in an easier way with an excellent level of hygiene.

Degree programmes at DTU within the area of food

- Bachelor of Engineering in Food Safety and Quality
- Bachelor of Science in Food and Nutrition in collaboration with the University of Copenhagen with the possibility of doing an internship
- Master of Science in Food Technology
- The study programme Aquatic Food Production - Safety & Quality
- Master's Degree in Food Quality and Safety
- PhD studies at the National Food Institute.

The National Food Institute also continuously offers various continuing education courses, including free Coursera e-learning courses.

DTU Foodlab

- a playground for innovation of foods

In 2018, DTU established a 300 square metre innovation playground for foods. Here students, researchers, and businesses can test their ideas within the area of foods. The facilities offer a fermentation plant and a test kitchen.

The Foodlab is part of DTU Skylab, an innovation hub focusing on promoting student innovation for all students at DTU.

DTU Foodlab is the setting for part of the National Food Institute's teaching activities, and together with Foodlab, the Institute plans several innovation competitions with foods as a focal point.

From waste to side streams - innovation on the plate

Besides education and training, innovation has become a much bigger activity as the Institute has grown over the years and merged with industrial research environments from other departments at DTU.

At the centre is the development of sustainable technological solutions within the areas of health and foods. What was previously known as waste in the production of food, the Institute would now rather consider as innovative side streams. How can you use residual products to create new high-quality products such as proteins and fish oils?

The Institute also helps the industry avoid harmful substances and bacteria in the production process. Innovation increases the health and safety of the consumers through optimized products, which at the same time strengthen the businesses' position in the market.

Student innovation helps SMEs

Combining education and innovation adds up to student innovation. Through internships and theses, students help small and medium-sized enterprises, SMEs, with innovation. This benefits both parties. The students get to test their theories in practice, and small enterprises gain access to research much faster than by being co-applicants in big research projects which - on the other hand - may lead to more thorough, complicated, and long-term studies. Companies who participate in research collaborations grow more than companies that do not, and thanks to student innovation, more companies can achieve this benefit.

Data at the centre of scientific advice

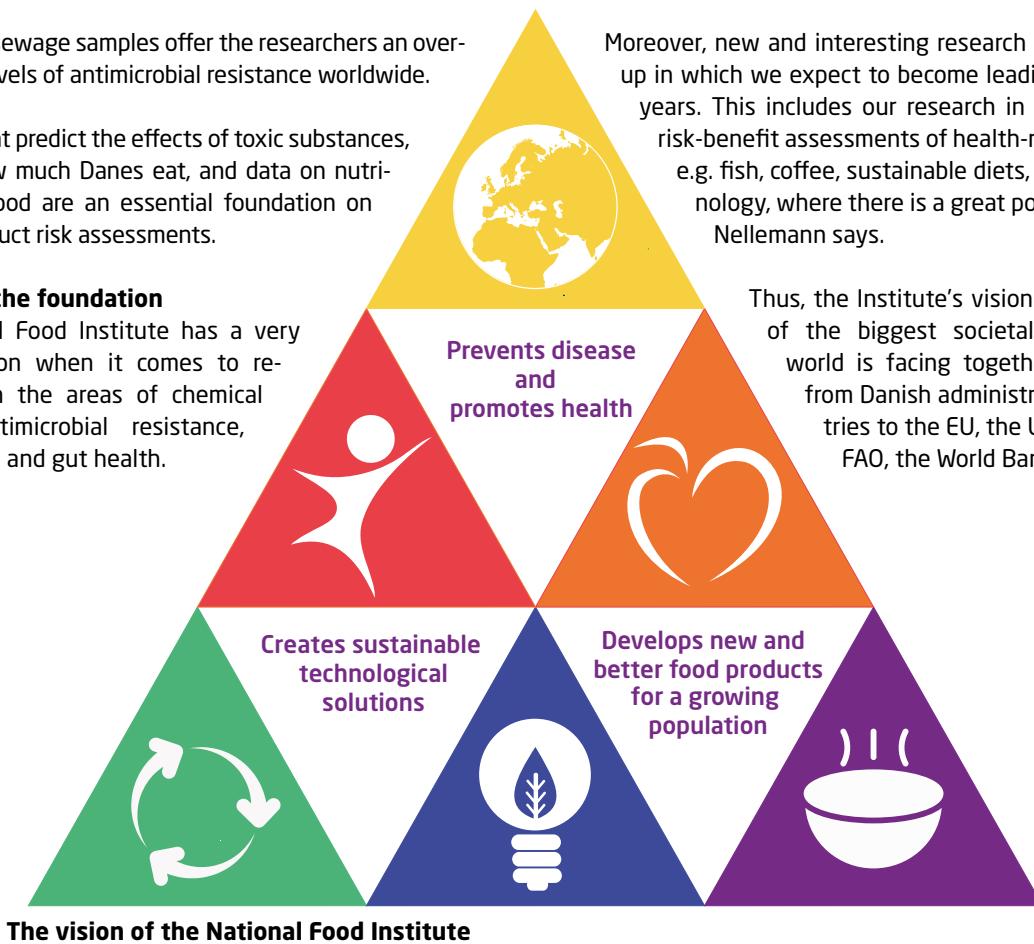
Data and knowledge form the basis of the Institute's scientific advice services. In respect of research, the strength of the Institute is data on the state of Denmark and the world when it comes to nutrition as well as the chemical and the microbiological areas.

For example, sewage samples offer the researchers an overview of the levels of antimicrobial resistance worldwide.

Databases that predict the effects of toxic substances, what and how much Danes eat, and data on nutrients in our food are an essential foundation on which to conduct risk assessments.

Research is the foundation

"The National Food Institute has a very strong position when it comes to research within the areas of chemical cocktails, antimicrobial resistance, sustainability, and gut health.



Moreover, new and interesting research areas are coming up in which we expect to become leading over the next years. This includes our research in food allergies, in risk-benefit assessments of health-related aspects of e.g. fish, coffee, sustainable diets, and in food technology, where there is a great potential," Christine Nellemann says.

Thus, the Institute's vision is to solve some of the biggest societal challenges the world is facing together with partners from Danish administrations and ministries to the EU, the UN system, OECD, FAO, the World Bank, and WHO.

Mission and vision

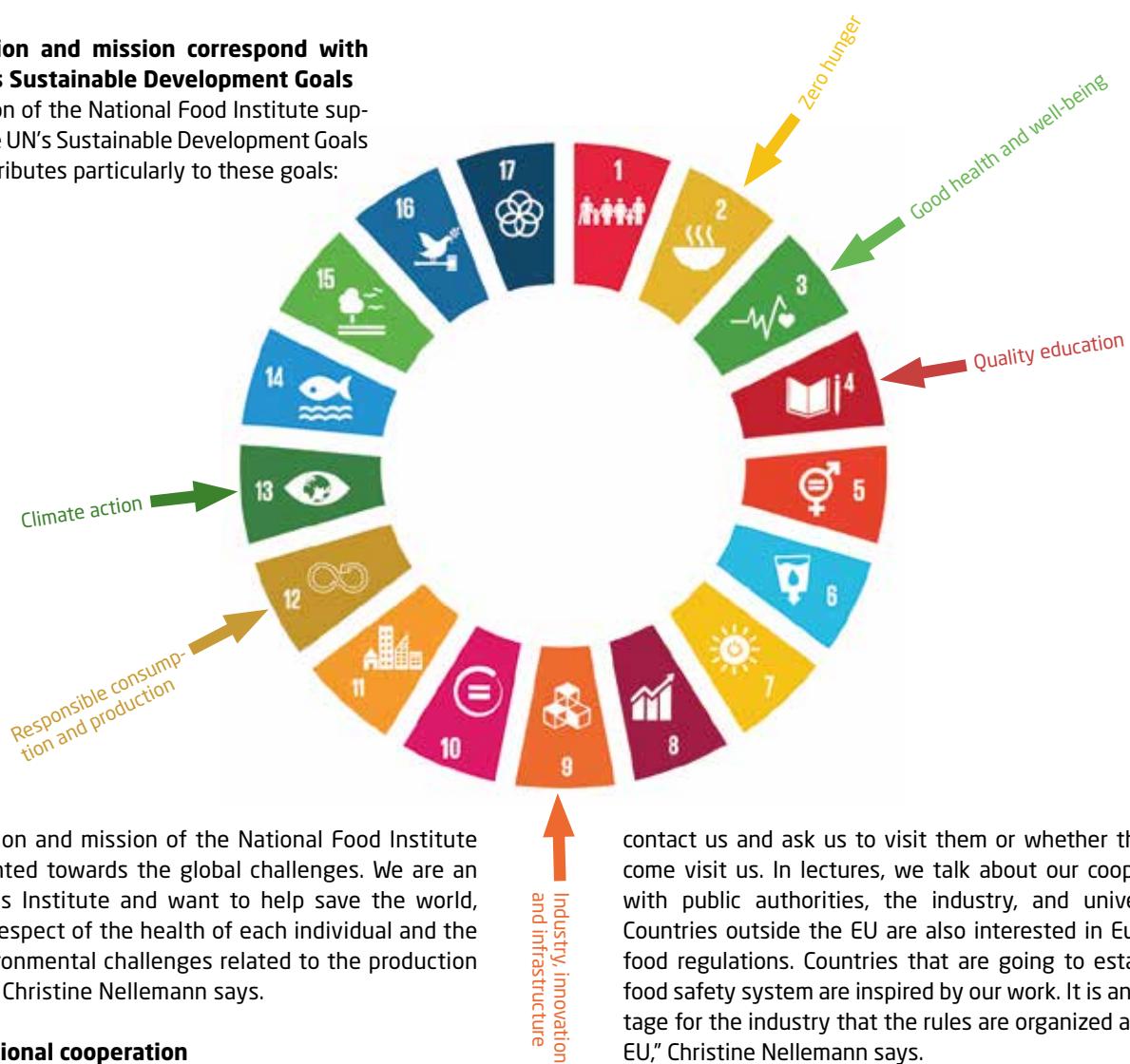
The National Food Institute conducts research into and disseminates – through advice, innovation, and teaching – sustainable and value-creating solutions in the area of food and health for the benefit of society. The Institute delivers its outcomes through an interdisciplinary cooperation between the disciplines of nutrition, chemistry, toxicology, microbiology, epidemiology, and technology.

The Institute's vision is to make a difference by generating future prosperity through research into food and health. The National Food Institute:

- prevents disease and promotes health
- develops new and better food products for a growing population
- creates sustainable technological solutions.

The vision and mission correspond with the UN's Sustainable Development Goals

The vision of the National Food Institute supports the UN's Sustainable Development Goals and contributes particularly to these goals:



"The vision and mission of the National Food Institute are oriented towards the global challenges. We are an ambitious Institute and want to help save the world, both in respect of the health of each individual and the big environmental challenges related to the production of food," Christine Nellemann says.

International cooperation

In the beginning, the National Food Institute primarily served as a national institute. Today it is an international centre for research and knowledge where most of the research is conducted in international networks and consortia.

"I will say that the Institute is among the world leaders within our areas of expertise. Foreign countries often

contact us and ask us to visit them or whether they can come visit us. In lectures, we talk about our cooperation with public authorities, the industry, and universities. Countries outside the EU are also interested in European food regulations. Countries that are going to establish a food safety system are inspired by our work. It is an advantage for the industry that the rules are organized as in the EU," Christine Nellemann says.

EFSA is the European Food Safety Authority, an independent agency of experts providing scientific advice to the EU on food safety, nutrition, and animal and plant health. In 2008, EFSA established collaborating centres (focal points). In all the years, the National Food Institute has represented EFSA's work in Denmark.

The National Food Institute has several important global cooperating partners, including the French agency ANSES, the German institute BfR, the Japanese Food Safety Commission, and the Chinese CFSA. Other important cooperating partners are Lund University, Hong Kong Polytechnic University, and University of Bologna, which together with the National Food Institute make up the Joint Centre of Excellence in Food Safety - DISH.

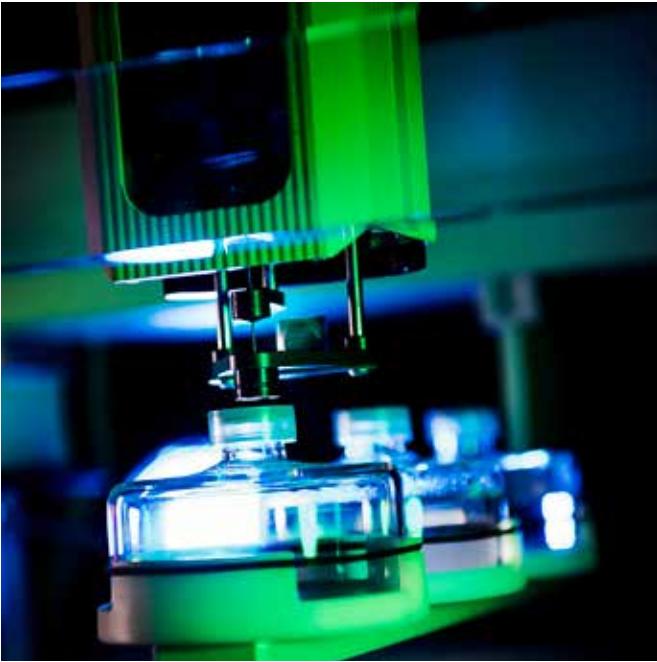
Acknowledged for its high professional expertise

Since 2006, the Institute has served as an EU reference laboratory (EURL) for antimicrobial resistance (EURL-AR) and for pesticides in cereals and feeding stuff (EURL-CF). In 2018, the Institute was also awarded the honour of being responsible for processing contaminants in food (EURL-PC) and for metals and nitrogenous compounds in feed and food (EURL-MN). This appointment shows that the National Food Institute offers high professional competencies and quality.

Since 2001, the National Food Institute has been WHO Collaborating Centre for Antimicrobial Resistance. In 2016, the Institute was appointed as WHO's first collaborating centre for genomics. This is recognition of the Institute's pioneering research in the area of whole genome sequencing - a technology that allows a microorganism's entire DNA profile to be mapped simultaneously. The technology can be used to monitor and combat foodborne disease outbreaks.

The Institute's researchers and advisers have joined several expert groups, panels, committees, and working groups, indicating the international level of the Institute's activities within the framework of:

- The European Food Safety Authority (EFSA)
- The European Committee for Standardization (CEN)
- The European Union (EU)
- The Food and Agriculture Organization of the United Nations (FAO)
- The Nordic Council of Ministers and the Nordic Council
- The Organisation for Economic Co-operation and Development (OECD)
- The World Health Organization (WHO).



As European reference laboratory, the National Food Institute sets international standards for how laboratories worldwide test for antimicrobial resistance, pesticides, metals, and processing contaminants in foods.

Liquid chromatography mass spectrometer. Joachim Rode

Good advice from the Advisory Board at the National Food Institute

The National Food Institute receives good advice from the Director of Institute's Advisory Board on the Institute's activities in respect of research, education, advice giving, business cooperation, and innovation:

- Deputy Director General Annelise Fenger, Danish Veterinary and Food Administration
- Vice President - External Collaboration Esben Laulund, Chr. Hansen A/S
- Research Director Morten Andersen Linnet, Danish Agriculture & Food Council
- Industry Director Leif Nielsen, DI Foods (The Confederation of Danish Industry)
- Senior Food Adviser Camilla Udsen, Danish Consumer Council.

The National Food Institute from 1959-2019

1959

On 5 June, the Danish parliament adopts law No. 182 on a food institute etc. Thus, the seeds of most of the Institute were sown.

1960

The National Pesticide Laboratory is established in consequence of the law on a food institute etc.

1961

The land of Mørkhøjgård in Gladsaxe Municipality is acquired for the purpose of construction and to gather geographically spread units, which were later going to constitute the National Food Institute (Statens Levnedsmiddelinstitut).

1968

The National Food Institute (Statens Levnedsmiddelinstitut) is formally established as an institute under the Danish Ministry of the Interior.

1969

The National Vitamin Laboratory, the National Pesticide Laboratory, and the food and nutrition-hygiene service of information and literature under the Danish Health Authority are amalgamated and move to Mørkhøj. The opportunity to conduct toxicological studies is added.

1971

The National Food Institute (Statens Levnedsmiddelinstitut) is transferred to the newly established Ministry of Pollution Control (later called the Ministry of Environment).

1973

The Danish parliament adopts a law on foods, including on the National Food Institute (Statens Levnedsmiddelinstitut).

The Institute's researchers prepare the first Danish positive list of allowed food additives.

1979

The Danish parliament adopts a law on chemical substances and products. Thus, the new rules on classification and labeling provide the Institute with new advisory tasks.

A new unit of nutrition under the National Food Institute (Statens Levnedsmiddelinstitut) is going to work with nutrients, food composition tables, dietary surveys, etc.

1981

The first official nutrition recommendations are published in Denmark. They are based on the Institute's cooperation in the Nordic countries on common Nordic nutritional recommendations.

1983

The Institute publishes the first official Danish food composition tables in book form, containing the nutritional content in Danish foods. Moreover, it starts conducting systematic analyses of nutrients in typical foods.

1985

The National Food Institute (Statens Levnedsmiddelinstitut) changes its name to the National Food Agency and conducts the first national dietary survey.

1986

The world's first law on genetic technology is adopted by the Danish parliament, based on the preliminary work and recommendations from, amongst others, the National Food Agency.

1987

The National Food Agency is transferred to the newly established Ministry of Health.

1989

For the first time, the National Food Agency publishes the so-called Drogeliste containing risk assessments of plants, fungi and parts thereof that are used in dietary supplements and herbal tea.

1991

The Ministry of Health and the Ministry of Industry, Business and Financial Affairs share the national information obligations on nutrition. The National Food Agency is responsible for information on the connection between diets and health/disease. The Danish Consumer Agency focuses on the consumer-related aspects.

1992

The EEC directive concerning zoonoses is adopted, leading to systematic monitoring and annual analyses of antimicrobial resistance and zoonoses in Denmark.

1994

The Danish parliament adopts the law on zoonoses and includes livestock in the work with food safety. The National Food Agency starts advising on disease-causing microorganisms and putrefaction bacteria in food.

1995

The DANMAP programme is initiated with the purpose of monitoring the consumption of antimicrobials and the occurrence of antimicrobial-resistant bacteria in animals, foods, and humans.

1997

The National Food Agency merges with the Danish Veterinary Service and becomes the Danish Veterinary and Food Directorate under the newly established Ministry of Food.

2000

The Danish Veterinary and Food Directorate changes its name to the Danish Veterinary and Food Administration.

The work with research and monitoring in the area of antimicrobial resistance leads to the appointment as a WHO collaborating centre in this area.

2002

The Danish Veterinary and Food Administration concentrates its research and risk-assessment activities in the Institute for Food Safety and Nutrition.

The Food Databank is launched, and the official food composition tables are publicly available online.

2003

The work with research and monitoring within antimicrobial resistance also leads to the appointment as an EU reference laboratory.

2004

The Danish Veterinary and Food Administration's Institute for Food Safety and Nutrition and the Danish Veterinary Institute merge and become the Danish Institute for Food and Veterinary Research. The Institute is transferred to the new Ministry of Family and Consumer Affairs. This merge significantly increases the activities in the areas of food microbiology and epidemiology.

2007

The Danish Institute for Food and Veterinary Research merges with several other sector research institutes and the Technical University of Denmark (DTU), leading to the establishment of the present National Food Institute.

2008

The European Food Safety Authority, EFSA, appoints the National Food Institute as collaborating centre in Denmark.

The National Food Institute takes over the area of food production engineering from DTU and adds food technology as a new professional field.

2010

The industry-oriented research conducted by DTU Aqua in fish and shellfish moves to the National Food Institute with 70 employees.

2011

The first students enter the bachelor of engineering programme in food analysis (now BEng in Food Safety and Quality).

2013

The DTU Centre for Hygienic Design opens at the National Food Institute.

2014

A research group from DTU Bioengineering moves in at the Institute, increasing the focus on developing new sustainable foods and food components.

2017

The Institute is located at Lyngby campus, amongst others in the largest new building at DTU.

2018

The EU appoints the Institute as an EU reference laboratory for process contaminants in foods and metals, and for nitrogenous compounds in feed and foods.

2019

The National Food Institute celebrates its 60th anniversary.