

SMART FOOD CHOICES

SUSTAINABLE COLD: AN ENVIRONMENTAL CHALLENGE

More than **13,500** French agri-food businesses depend on **refrigeration**.
(Ania, 2016)

40% of French people's food intake depend on cooling technology every year.
(Ademe, 2017)



The agri-food sector (excluding milk and sugar) in France accounts for nearly **40%** of the electricity used for industrial refrigeration.
(Ademe, 2017)

RUNGIS & CO'S startup Tetramos has come up with Tetrafridge, an industrial thermometry solution. Aimed at fresh produce professionals, especially cold storage providers, this connected and eco-responsible service helps them to monitor the temperatures in their facilities in positive or negative cold, in order to avoid the risks of a rupture in the cold chain.

LEVIATHAN DYNAMICS is revolutionizing industrial refrigeration systems by replacing environmentally damaging, fluorinated refrigerant gases with a more efficient and greener solution: water. Thanks to a single-stage jet vacuum pump, the Paris-based startup promises a 30% increase in energy efficiency.

PROTEINS OF THE FUTURE:

ALGAE AND INSECTS, COMING SOON TO A PLATE NEAR YOU!

Global demand for proteins is set to increase by **50%** between 2000 and 2030. (FAO, 2014)

Plant protein: **the French consume on average 1.42kg of pulses every year.**(Ministry for Agriculture)



Spirulina contains as much as **57%** protein. (ANSES, 2018)

Orthoptera (locusts, crickets, grasshoppers etc.) contains between **23%** and **65%** protein. (FAO, 2014)

IMPROVE

Amiens-based Improve has launched the first European R&D platform aimed at developing proteins of the future: protein crops, cereals, oil seed, algae, roots, co-products, microorganisms and bacteria, etc. The company has set its eyes in particular on the markets for human consumption.

ENTOMOFARM

Entomo Farm produces insects for the food industry. The company is the leading French producer of insect meal and also develops food and cosmetic oils, as well as organic matter for biological fertilization

ALGAMA

Algama specializes in the development of spirulina or chlorella-based food products as well as microalgae rich in proteins, vitamins and trace elements, and is trying to incorporate seaweed into our daily diet. The Paris-based startup raised €3.5 million in 2017.

PACKAGING OF THE FUTURE:

TOWARDS ACTIVE, INNOVATIVE, AND ENVIRONMENTALLY RESPONSIBLE PACKAGING

France is the **world's third largest exporter of packaging.** (France Emballage)

The demand for bioplastic in the packaging industry increases by **11%** every year. (Ceresana, 2016)



Two-thirds of packaging produced is used for food. (France Emballage)

Packaging companies are committed to using **188,000 more tonnes of recycled plastic** in their products by 2025. (Ania, 2018)

TASSIOPEE

French startup Tassiopee has developed edible packaging as a way to eradicate plastic cups. The company's inaugural product is a chocolate-lined biscuit cup, which is both heat- and humidity-proof.

FDR EMBALLAGE

The Hauts de France-based company FDR Emballage has developed a cling film made from wood. Resistant, transparent and microwaveable like its petrochemical counterpart, this film is also both biodegradable and compostable.

FOOD AND DIGITAL TECHNOLOGY

RETHINKING FOOD PRODUCTION, DISTRIBUTION AND CONSUMPTION

There are already more than **400** mobile applications to assist breeders. (Renaissance Numérique, a digital think tank)



For **91%** of agri-food business executives, the digital transformation is a key part of their business strategy. (Vif/Usine Nouvelle survey, 2017)

In 2017, **74% of farms had 3G and 4G phone coverage** (up 12 percentage points on 2016), while 43% surfed the internet on their smartphone. (Agrinautes survey, 2017)

NAVIGATEUR DES AGRICULTEURS

The "Navigateur des agriculteurs" is an application that enables farmers to drive their agricultural machinery accurately, even in poor visibility, from their smartphone or external GPS

receiver. The app allows them to map out routes across their land, taking into account existing obstacles.

NAIO TECHNOLOGIES

Set up in 2011, Naïo Technologies develops and markets robots for use on farmland and in vineyards,

as well as power tools to help farmers weed, hoe and harvest the fruits of their labor with confidence. At the end of 2017, the Toulouse startup had raised €2 million to market its products internationally.

TAILORED FOOD:

THE FOOD SECTOR THAT ADAPTS TO CONSUMERS' NEEDS

One out of every 100 people in Europe is gluten intolerant. (The French Association of Gluten Intolerance)



Between four and **10%** of people over 70 who remain at home in France are undernourished. (Collective fight against malnutrition)

France has world-class research capabilities in this field via **INRA** (the French National Institute for Agricultural Research) and **INSERM** (the French National Institute for Healthcare and Medical Research).

ALANTAYA

Alantaya has developed an online service that offers menus adapted to users' health constraints. Through the interface, they can seek advice from professional dieticians and request a personalized dietary assessment.

PROBITIS

Probitis biscuits are a high-protein food that acts as a food supplement. They help combat malnutrition in elderly people by helping them gain or maintain weight.

FERMENTS OF THE FUTURE:

COMBINING TRADITIONAL EXPERTISE WITH RESEARCH TO DEVELOP NEW PRODUCTS

Ferments are almost everywhere: yoghurts, cheeses, breads, alcoholic beverages, charcuterie etc..



France exported more than **€520 million-worth** of yoghurt and other fermented or acidified dairy products in 2017.
(French Customs Authorities)

Fermentation has three main aims: to make food more digestible, keep it fresh for longer and produce a priority substance.
(ENSAIA, University of Lorraine)

BIOPROX

Bioprox, the Proxis Développement group's food industry and biotechnology solutions cluster, specializes in the production of freeze-dried lactic ferments (acidifying ferments, flavorings, ripening ferments and bioprotection ferments) used to make dairy products (yoghurts, fermented milks and cheeses). Bioprox sells its products in more than 40 countries, either directly or through agents and distributors.

LESAFFRE

Lesaffre has been the global leader in the production of yeast and yeast derivatives for over 150 years. In 2017, it launched a R&D platform for bacteria on the Eurasanté park in Loos (Hauts de France region). The platform aims to identify bacteria of interest and come up with innovative products relating to health and nutrition.

More information on
www.businessfrance.fr

