NUTRITION AND FOOD TECHNOLOGIES
A cutting-edge industry of the canton of Vaud
CHAMPIONS OF FOOD

Personalized nutrition, functional foods, robotic farming: tomorrow’s meals are being cooked up in Vaud.

On the back of its long farming tradition, the canton of Vaud saw the agri-food sector develop over a century ago with the creation of Nestlé in Vevey in 1905. Other influential companies followed: Eckes-Granini fruit juices, Reitzel vegetables in jars, Hilcona’s ready-meals. The region also enjoys a strong industrial tradition, complemented by a bold spirit of innovation, allowing the companies it hosts to design and produce new solutions that meet current needs and even anticipate the challenges of the future.

While technological and innovative startups are springing up in Vaud, the canton is also home to the expertise and reputation of leading international companies in their field, such as General Mills, Chiquita and ADM.

From local to global

The products that these companies produce are exported all over the world. They convey a strong brand image, combining quality, authenticity and expertise, illustrated by the many “appellation d’origine contrôlée” products of the agricultural sector.

In addition to large-scale food trade, the canton of Vaud has a number of important stakeholders in the research and development of new products, such as the Agroscope (Changins), the Agropôle (Molondin) and the Nestlé Research Center. Sector world leader Nestlé also opened Nestlé Health Science, a branch dedicated to nutritional care.

Academic institutions, in particular the École Polytechnique Fédérale de Lausanne (EPFL), are working on a real challenge for the future: agritech. Investing in this emerging sector are startups Gamaya, ecoRobotix (Y-PARC), CombaGroup (Molondin) and US company Geosys, which has been based in the region for a number of years. These companies are developing drones to monitor crops, weeding robots, “smart” greenhouses, aeroponic systems and remote sensing systems. The EPFL has also opened the “Integrative Food and Nutrition center” to focus entirely on issues related to nutrition and food production. To benefit from the dynamic environment provided by the EPFL, Nestlé Institute of Health Science has settled its laboratories in the EPFL Innovation Park to do fundamental research for developing science-based targeted nutritional solutions for the maintenance of health.

“In all fields, including in the agri-food sector which I know particularly well, new companies are emerging in the canton of Vaud and are successfully developing there, supported by a very close-knit network of higher education institutions, innovation incubators, financial support organizations and project promoters. In addition, the cultural diversity of the canton’s population contributes significantly to this dynamic.”
AN IDEAL ENVIRONMENT FOR INVESTING

Located in the heart of Europe, Switzerland never ceases to amaze with its diversity and prosperity. Its political system is based on direct democracy and consensus, giving rise to productive stability that greatly benefits the economy. The country regularly ranks among the most competitive in the world.

Vaud, the largest of the French-speaking cantons, is also the most populated, with more than 800,000 inhabitants. An illustration of its openness is that nearly a third of its population hails from abroad. A significant proportion of these people are highly qualified and were attracted by the working conditions and excellence of the region’s institutions.

There are some 50,000 companies in the canton, mainly operating in the service sector, but they also lead the way in technology sectors with high added value such as precision instruments, medical equipment and information technology.
AREAS OF EXPERTISE

The agri-food sector comprises both the activity of companies in the primary sector (farms themselves, which produce food) and the secondary sector (the agri-food industry, which turns them into processed foods).

All research activity, with the aim of optimizing processes in one of these two sectors, also plays an important role. The canton of Vaud has a leading role in the following particular sectors:

Nutrition
The field of nutrition is vast, covering questions of taste, texture, aesthetics, health. The challenges are many: combating junk food, tackling rising obesity and diabetes in Western societies, finding solutions to food allergies and intolerances etc. Several academic institutes are focusing their efforts here, in particular the EPFL Integrative Food and Nutrition Center, whose strength comes from its cross-disciplinary nature.

The R&D centers of both Nestlé and Cereals Partners Worldwide focus primarily on issues surrounding the health impact of foods. The Nestlé R&D center brings together over 250 scientists working in diverse fields: nutritionists, biochemists, physicists, immunologists, pharmacists, computer scientists, mathematicians, sensory analysts, foodstuff technologists, packaging and design experts and many more.

Agritech
Agricultural technologies is a relatively new field which encompasses an array of innovations used in agriculture, horticulture and aquaculture that improve the yields, efficiency and profitability of crops from an environmental perspective. Two Vaud startups with strong potential reflect this new field of research: CombaGroup, which develops aeroponic solutions for growing lettuce, and ecoRobotix, active in the design of a weeder robot to limit the use of chemical herbicides in crops. Agritech also includes startups active in the design and manufacture of drones, such as Gamaya and senseFly. The technologies they develop enable better knowledge of the soil to be obtained, thus helping farmers in their work.

Expertise in the coffee sector
With the presence on its territory of Nescafé and Nespresso – subsidiaries of food giant Nestlé – as well as US company Starbucks based in Lausanne, the Vaud region is home to the world’s key stakeholders in the manufacture and distribution of caffeinated beverages. This concentration has allowed Vaud to develop a position of global expertise in coffee R&D, quality testing and trading.

Packaging
This designation refers to both the packaging of a product as such (aesthetics, attractiveness, marketing etc.) and how it is packed (hygiene, conservation etc.). Eco-design packaging is when minimal environmental impact is involved. At the EPFL, the Materials Science and Engineering Section as well as the COMATEC institute of the HEIG-VD are focused on this issue. The world leader Tetra Pak has its international headquarters in Pully.
CUTTING-EDGE RESEARCH INSTITUTES

The canton of Vaud is home to a large number of scientists specializing in nutrition and agri-food.

Nestlé Research Center
In 1987, agribusiness giant Nestlé established a center devoted entirely to research and development (R&D) near Lausanne. Its work ranges from basic research on nutrition and health to applied research for product development. The center is at the forefront of technology and knowledge related to nutrition, bioanalytics, functional foods and food security. It also hosts the Nestlé R&D Accelerator, which brings together scientists, students and startups to accelerate the transformation of innovative ideas and concepts into prototypes and tangible products.

Nestlé regularly works with universities and university hospitals in Switzerland, in particular with the University of Lausanne (UNIL), the EPFL and the ETH Zurich.

It still has a research center in Orbe and a center of excellence for coffee products and technologies, powdered drinks and cereals, including the Nestlé Professional Beverage Center, as well as the CPW Innovation Center – a site for R&D for its joint venture with General Mills. The multinational has established its companies Nestlé Health Science and Nestlé Institute of Health Sciences in the Biopôle and EPFL Innovation Park respectively.

Agroscope (Changins)
The Agroscope is the Swiss center of expertise for agricultural research. Its research activity extends to the entire value chain of the agri-food sector. It seeks to achieve competitive and multifunctional agriculture, and quality food for a healthy diet while leaving the environment untouched.

Agroscope has also established a connected Smart farming department. The institution studies how new technologies can be used in Swiss agriculture to achieve maximum benefit (profitability, time savings, improved quality and animal welfare). The Agroscope site in Tänikon, in the canton of Thurgau, is being transformed into the “Swiss Future Farm”, a unique European platform for new technologies in agriculture and agribusiness.

55% of Nestlé’s global research budget is invested in Switzerland
10 of its 40 research centers are located in Switzerland

+40.5% increase in the number of agri-food companies (wholesale and industry) in the canton of Vaud between 2008 and 2016.

12 sites spread throughout the country, including three in the canton of Vaud: Changins (one of the largest in Switzerland), Avenches and Pully

34,000 employees contribute to the development of the food industry in Switzerland.

Source: Innovaud, agritech
Source: Conseil du Léman agribusiness fact sheet
**École Polytechnique Fédérale de Lausanne (EPFL)**

This institution ranks among the top 20 universities in the world, and also participates in research in the agribusiness sector. The Materials Science and Engineering faculty addresses everything related to packing and packaging, especially of food products. The Chemistry of foodstuffs section focuses on the properties of foods and those of their combinations. The EPFL Innovation Park is home to certain agritech startups, including Gamaya, which is currently developing a range of agronomic services based on hyperspectral images and artificial intelligence.

**School of Engineering and Management of the canton of Vaud (HEIG-VD)**

The School of Engineering and Management, based in Yverdon-les-Bains, is also involved in the research field of the agri-food industry, particularly through its COMATEC institute (design, materials, packing and packaging). The institute benefits from a wide range of skills, ranging from integrated and structured design methodology to mechanical and micro-technical design, as well as digital modeling and analysis, material selection and characterization, assembly techniques, destructive and non-destructive testing of materials, analysis of mechanical structures, and everything related to packing and packaging.

The **EPFL's Integrative Food and Nutrition Center** is a cross-disciplinary research center that covers the whole food value chain, from agriculture to the food industry, as well as restaurants and retailers. The research projects carried out there cover a vast area, from allergies to societal issues, as well as product packaging and health. The Center works in close collaboration with several European research centers, particularly in Germany and Belgium, as well as with regional industry stakeholders such as Nestlé and General Mills.

The **École hôtelière de Lausanne (EHL)** is active in research, innovation and entrepreneurship. The Innovation Village, which is set to be launched in 2019, will be a place where professionals, academics and entrepreneurs can develop new solutions in the fields of education and service occupations in a “sandbox role-playing-type spirit”. A partnership with Nestlé has been in place for several years. The EHL also operates the METRO Hospitality Lab, in partnership with the METRO Group. The school collaborates with other institutions such as the EPFL, for example to unite science and the culinary arts.
CUTTING-EDGE COMPANIES

Below is a selection of particularly innovative and promising businesses from the 300+ companies active in the agri-food sector in the canton of Vaud.

AAHealthcare
In the front line of the demand for essential amino acids that are clinically proven for the health and well-being of people with deficiencies.

aahealthcare.ch

ADM
Founded in 1923, Archer Daniels Midland is an American multinational active in the agri-industry, particularly in the processing of soybeans and cocoa. It has 270 factories around the world.

adm.com

AgroSustain
Development and commercialization of natural solutions to stop and prevent the development of moulds on large agricultural crops.

agrosustain.ch

Ally Coffee Trading
This US company specializing in the coffee trade has established its European headquarters in Lausanne.

allycoffee.com

Almondgy
The Swiss pioneer in sugar-free (and organic) nutrition.

almondgy.ch

Alver
Food company producing everyday foods based on Golden Chlorella. This nutrient-dense micro-algae is a sustainable source of protein.

alver.ch

AMAGGI
Amaggi was founded in Brazil in the late 1970s and is the world leader in soybeans. While its processing plants have remained there, Amaggi has set up its European headquarters in Lausanne.

amaggi.eu

Amazentis
Innovative life science company dedicated to employing breakthrough research and clinical science to bring advanced therapeutic nutrition products to life.

amazentis.com

Cereals Partners Worldwide (CPW)
CPW was created in 1989 in Lausanne as a joint venture between Nestlé and General Mills to produce and market breakfast cereals. Today, they are distributed in more than 130 countries.

nestle.com/aboutus/overview/businesses/cereal-partners-worldwide

Chiquita
The world leader in the banana market has its European headquarters in Rolle. Chiquita is active in more than 70 countries worldwide and also sells pineapples, ready-made fruit salads and dried fruits.

chiquita.com

Eckes-Granini
Eckes-Granini is the leading Swiss fruit juice producer with its two brands, Granini and Hohes C. It has a partnership with Nestlé Waters Suisse SA for distribution and marketing in Switzerland.

eckes-granini.ch

Emotion Food Company
Since 2008, the company has been working to improve the lives of consumers and to meet their specific needs. From design to industrialization, through prototypes and tests, it has created a binding agent for people with dysphagia.

emotionfood.ch

General Mills
This US company ranks sixth among the world's largest food groups with a portfolio comprising over 100 brands.

generalmills.com
GnuBiotics
Nutrition company developing and supplying breakthrough nutritional ingredients to influence the microbiome and positively impact the gut for the food and nutrition industries.
gnubiotics.com

Hilcona
Initially established as a canning factory in the Principality of Liechtenstein in 1935, this manufacturer of ready-meals now employs over 2,000 people. One of its two production centers is based in Orbe in the canton of Vaud.
hilcona.com

Mill Russ
Montreux-based Mill Russ is geared toward the trade of grains, flours and other food products.

Mootral
The company develops a natural feed supplement for cows that reduces methane emissions by 30%.
mootral.com

NESPRESSO
This Nestlé Group subsidiary launched its famous individualized coffee capsules almost 30 years ago and now has stores in 289 cities around the world. When it was created in 1986, Nespresso had only four different types of coffees and just five employees. In the early years, its products were aimed only at professionals. At the end of the 1990s, the brand understood that it had to offer new tastes and new machines on a regular basis. It was primarily the launch of its online ordering site that allowed it to rapidly expand its customer base.

In the first decade of the 2000s, the company worked on its coffees, selecting quality raw materials and seeking out tastes that would appeal. The strength of the brand is also its ability to adapt to the different markets that it targets. Its recent success has been the development of a new machine adapted to long coffees in North America. Today it is the world leader in coffee machines, capsules and accessories. Nespresso’s headquarters are located in Lausanne. It also has two production plants in the canton of Vaud, in Avenches and Orbe, and one in Romont. The company employs more than 2,000 people in Switzerland.
nespresso.com

Nestlé
The Nestlé Group, which is world No. 1 in agribusiness, opened its first offices in Vevey at the end of the 19th century. Its headquarters are still located there. Nestlé employs over 10,000 people in Switzerland, nearly a third of them in the canton of Vaud.
nestle.com

Reitzel
Reitzel was founded in Aigle in 1909. It primarily produces and sells condiments in jars and today has three branches in France, India and Turkey.
groupe-reitzel.com

Starbucks Coffee Trading
The US coffee giant, which has more than 27,000 outlets worldwide, has set up its international purchasing center in Lausanne.
starbucks.ch

RANKING

EXPORT MARKETS IN VAUD, IN ORDER OF SIZE

1. Chemistry (39%)

2. Precision instruments (18%)

3. Agricultural and silvicultural products (16%)

4. Watchmaking (11%)

Sources: Statistique Vaud/RTS

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gnubiotics.com

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NETWORK OF SUPPORTING PARTNERS

Several bodies can provide support and the necessary tools for companies operating in the canton of Vaud or wishing to set up there, and help them in networking with other organizations working in the same field.

**CLUSTER** **CleantechAlps**

CleantechAlps is a networking initiative led by the cantons of French-speaking Switzerland and Bern and supported by the State Secretariat for Economic Affairs (SECO). Its mission is to promote Western Switzerland as a European center for clean technologies. The cluster works with research institutes, PME and start-ups to provide them with visibility, support and networking. CleantechAlps has chosen to concentrate its activities on strengthening the sectors with high added value for the Swiss economic fabric, such as photovoltaics, hydraulics, waste recycling, industrial ecology, energy efficiency and eco-mobility.

cleantech-alps.com

**CLUSTER** **digitalswitzerland**

digitalswitzerland est une association suisse regroupant des acteurs publics et privés pour promouvoir et faire connaître la Suisse dans le domaine de la numérisation. Lancée en 2015 à Zurich, digitalswitzerland réunit désormais 85 membres, des institutions académiques, des cantons, des entreprises mais aussi le Forum économique mondial ou economiesuisse.

digitalswitzerland.com

**AGROPÔLE (MOLONDIN)**

The aim of the Agropôle, a two-hectare site located in Molondin in northern Vaud, is to create a hub of expertise and industrial innovation dedicated to agribusiness and with a strong agritech component, all within a production center. The site’s mission? “To be an accelerator, to ultimately develop new production methods in Switzerland which are of high-quality,” explains founder Stéphane Fankhauser, an agrifood entrepreneur who has been working since 2009 to establish this specialized science park.

The Agropôle aims to combine SMEs and startups on its site. Today it has nine companies. It offers facilities devoted to the activities of the sector – cold-storage cells, packaging terminals, dispatch halls. Administrative and logistical services as well as communication and marketing support for launching projects are also available to companies. The businesses located there were selected for their entrepreneurial ability and are “beyond the stage of applied research, in a pre-industrialization phase,” Fankhauser explains.

agropole.com

“During our development phase, which lasted five years, we were financed by business angels. Our main shareholders included specialized funds in agriculture and industry. Having access to industrial capital is crucial in financing business development.”

SERGE GANDER
CEO of CombaGroup
Economic Development – Canton of Vaud (DEV)
The DEV is the main contact for foreign companies looking to set up in the region. To fulfill its role, the DEV works with both private (banks, notaries, lawyers, etc.) and public partners (various government departments). It provides advice on administrative procedures and allows newly established companies to benefit from its vast network.
dev.ch

EPFL Innovation Park
Located next to the EPFL, the technological park of the same name hosts more than 160 companies, housed in 14 buildings, covering an area of 55,000 m². Over 2,000 researchers, engineers, scientists and administrative staff work there.
epfl-innovationpark.ch

Fial
The Federation of Swiss Food Industries (Fial) covers the 16 sectoral associations of the Swiss food industry. Its purpose is to safeguard – on an economic and economic policy level – the interests of affiliated branches as well as their member companies.
fial.ch

Foundation for Technological Innovation (FIT)
The FIT awards grants and loans (of between 100,000 and 500,000 francs) to support the development of innovative technology projects at different stages in their evolution.
fondation-fit.ch

Innosuisse
Innosuisse is the agency which promotes innovation in the Swiss Confederation. It is responsible for encouraging knowledge-based innovation in Switzerland through financial means, advice and professional networks.
innosuisse.ch

Les Ateliers de Renens
This innovation park in western Lausanne is dedicated to the field of design and regularly takes on skilled graduates from the ECAL (École cantonale d’art de Lausanne), whilst remaining open to all specialties, enabling cross-disciplinary projects to emerge. The Renens Innovation Park offers a MakerSpace and hosts the Mass Challenge startup accelerator, which started in Boston and has since expanded to Israel and Switzerland.
ateliersvdr.ch

INNOVAUD
As a gateway to innovation in the canton of Vaud, Innovaud supports startups and SMEs active in particular in the agri-food industry to develop solutions with them in the area of hosting, promotion, funding and/or coaching. Innovaud is firmly established in a vast network of partners, enabling it to redirect requests to the organizations most suited to the needs of each party. The organization has notably provided support to startups active in agritech. This rather new discipline clearly assumes specific risks. In order for them develop, these types of innovative companies require financing and support which differ from those of traditional agricultural businesses.
innovaud.ch

Office for Economic Affairs and Innovation (SPEI)
The SPEI supports companies established in the canton of Vaud, and more specifically those active in the sectors of industry and advanced technologies. SPEI advises and informs entrepreneurs, most notably by putting them in touch with the appropriate organizations according to their specific needs. SPEI can also provide direct financial support.
invest-vaud.swiss

Swiss Food Research
Swiss Food Research supports and encourages innovation (the development of new products and technologies), the improvement of product quality and a reduction in production costs. It provides companies active in the sector with cutting-edge infrastructure and resources, for example when applying for financial support.
swissfoodresearch.ch

Y-PARC
This technology park was created in 1991 in Yverdon-les-Bains and is the first of its kind in Switzerland. It is also one of the largest, covering an area of 50 hectares. It is a competence center which is home to 158 companies and startups. Y-PARC provides a full and varied infrastructure – with land for sale, premises to rent and a business incubator – and support services tailored to all.
y-parc.ch