



# Angers & Plants

**A LEADING ECONOMIC SECTOR IN EUROPE  
& A UNIQUE HERITAGE**

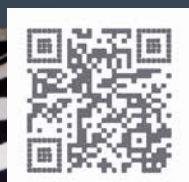




# ANGERS

## 360° IMMERSION

Discover Angers and its region,  
a hub for digital technology,  
plant capital  
and n° 1 in quality of life



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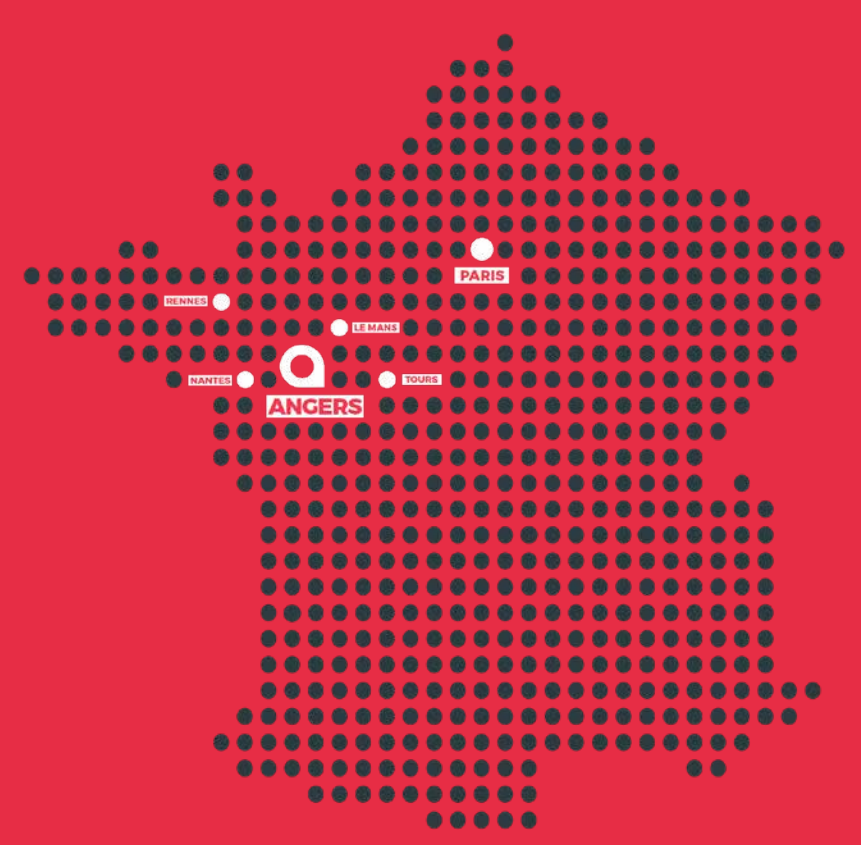
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ST-V



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## Coming to Angers: an easy to access area

- + **By car:** Nantes, Rennes, Le Mans 1 hour away / Atlantic coast and beaches 1 hour 30 / Dense motorway network
- + **Direct high-speed train (TGV):** Paris 1 hour 30 away / Roissy Charles-de-Gaulle airport 2 hours 20 / Nantes 35 mins / Direct trains for Lille, Brussels, Lyon, Marseille...
- + **By plane:** Business and seasonal flights from Angers Loire Airport

## Investing in Angers: an attractive area

- + **Centres of excellence:** Plants & Agri-food / Digital & Professional Electronics ❶ / Health & Silver Economy...
- + **International renown:** Végépolys – International competitiveness cluster dedicated to plants / Twinning of the City of Angers with Austin, Texas / International companies such as Cointreau, Giffard, Vergers d'Anjou, Fleuron d'Anjou, Clause, Turc, Vilmorin, Premier Tech Horticulture, Scania, Eolane, Evolis, among others...
- + **Business quarters under development:** Cours Saint-Laud ❷ / Quai Saint-Serge

## Studying in Angers: an ambitious area

- + **40,000 students, including 10 % from abroad:** 4 university campuses ❸ / Many Higher Education Establishments
- + **Leading university curricula:** including Plants, Health, Tourism, Professional Electronics, etc.
- + **Student's quality of life:** n°1 in best French cities to study in list (L'Etudiant, 2017)

## Visiting Angers: a welcoming area

- + **Plant & Wine Tourism:** Terra Botanica theme park and business centre / Dedicated tourist circuits / Winery visits in France's 3<sup>rd</sup> largest Protected Designation of Origin area...
- + **Cultural and natural heritage:** the Château d'Angers and its gardens / City of Art and History label / the Loire Valley is a UNESCO World Heritage site / Follow the Loire by bike...
- + **Cultural events:** Performances at Le Quai - Centre Dramatique National / Modern music at Le Chabada / Angers Nantes Opéra / Art-House cinema Les 400 coups / Festivals, including the Premiers Plans European First Film Festival / Museums / Libraries...

## Living in Angers: a captivating area

- + **Urban area of 400,000 inhabitants:** 48 % aged under 30 / 1,400 social and charitable associations
- + **Lifestyle:** 1<sup>st</sup> place in the best French city to live in (L'Express, 2017) ❹ / Top of the list of green cities (Observatoire des villes vertes, 2014 and 2017) / Exceptional natural areas
- + **Urban development:** Revegetation of the city centre / Angers Cœur de Maine project





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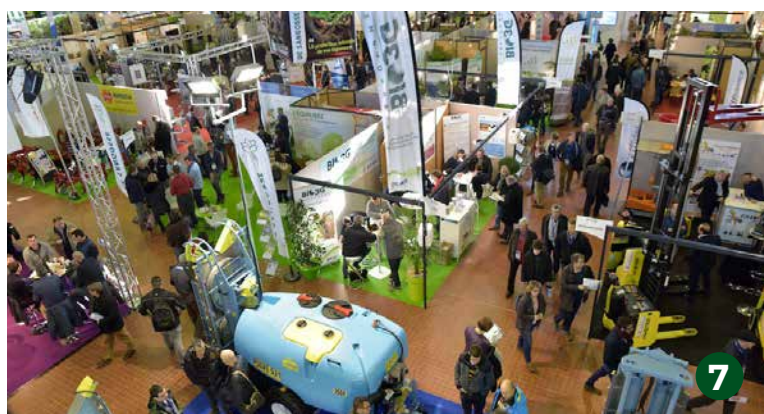
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# Key Facts

## & figures

**Excellence in the field of plants stretches back centuries. And today still Angers is the place where students, researchers and investors come to keep on developing this state of the art activity.**

### Higher education and research dedicated to plants

- + **The 1970s** marked the beginning of the ecosystem based around research and training
- + **450** experts involved in plant technology<sup>5</sup>, including researchers, teachers, engineers and technicians
- + **2500 students**<sup>2</sup> studying in around **30** courses at all levels
- + **8.400 m<sup>2</sup>** of laboratories and offices at the Maison de la Recherche
- + **10.000 m<sup>2</sup>** of greenhouses<sup>5</sup> and grow rooms in mutualised experimental facilities (INEM)

### Influence beyond borders

- + **Végépolys, International competitiveness cluster dedicated to plants**: more than **400** members and **365** innovative projects.
- + **Plante&Cité**, national technical centre for parks and landscaping: **500** members, **30** studies and experimental programmes per year.
- + **The Community Plant Variety Office (CPVO)**: an agency of the European Union which manages the system for protecting industrial property on plant varieties, almost **60,000** applications have been made since 1995, meaning almost **3,000** per year.
- + **The Salon international des techniques de productions végétales (SIVAL)**<sup>7</sup> more than **22,000** visitors
- + **31<sup>st</sup> International Horticultural Congress in 2022**: **3500** professionals from around the world are expected
- + **Leading European area for the production and sale of hydrangeas**<sup>4</sup> with **6 million** plants every year, **80 %** of which are for export.
- + **Seed production** places the Maine-et-Loire among world leaders.
- + **Ornamental horticulture and nurseries** put the Maine-et-Loire in **2<sup>nd</sup>** position nationally, **arboriculture**<sup>1</sup> **3<sup>rd</sup>** position nationally, and with **26 «Protected Designation of Origin» wines** is world-renowned<sup>3</sup>.

### “Greenest City in France” (2014 and 2017) and the “Golden Flower” Trophy (2016)

- + **100 m<sup>2</sup> of green space per inhabitant** well above the national average of **48 m<sup>2</sup>**.
- + **The landscape heritage** represents more than **14 %** of the city's total surface area.

### Sharing and loving plantlife

- + **Terra Botanica**<sup>6</sup> is ranked **10<sup>th</sup>** in the favourite theme parks in France (Tripadvisor, 2016).
- + **350.000 samples are present in the great herbarium** kept at the Gaston-Allard Arboretum, retracing the evolution of French flora.

# Twofold plant identity

## an economic and a heritage sector

No other city in France has the same historic, cultural and economic identity! Angers is remarkable due to its plant abundance and plant great diversity: from the traditional to the innovative, from the urban to the natural. Everyone is involved: young people as much as professionals, without forgetting the general public.

### The roots of an Angevin ecosystem dedicated to plants: geographic and historic rooting

Fruit, ornamental plants, trees, vines, vegetables, medicinal plants ... everything can grow in the Angers region. Such varied production is unique in France.

There are several reasons behind this:

- + **The right geography:** combining a temperate oceanic climate, the presence of water (the Loire and its affluents), good quality soil, all of which have generated a very broad range of plantlife.
- + **Emblematic characters** punctuate the history of Angers, including:
  - **In the 13th century:** the gardeners of the châteaux were already selecting varieties in the Anjou.
  - **In the 15th century:** King René ❶ introduced certain plants into the region, including the rose of Provins, apricot trees and Muscat grapes, among others.
  - **In the 19th century:** The Colporteurs fleuristes de l'Oisans (the peddler-florists of Oisans) settled as horticulturalists in the Anjou; Gaston Allard created the Arboretum where 3,500 species would be planted and tested; the father of pomology, André Leroy, created the biggest nursery in Europe (300 employees, 170 ha) and sold his produce throughout the world, and opened the door for future generations of nurserymen.
  - **In the early 1960s:** Edgard Pisani, minister of Agriculture, launched the development of the Authion valley (to the east of Angers) into a French "Little Holland".
- + **The creation of a dedicated ecosystem**
  - **From the 1970s onwards,** this favourable context led to the development of higher education and research in the plants sector: the creation of an INRA centre (French National Institute for Agricultural Research), the University of Angers, the ENITHP "Ecole Nationale des Ingénieurs des Travaux de l'Horticulture et du Paysage" which would later become Agrocampus Ouest.
  - **In 2005,** VEGEPOLYS, International competitiveness cluster dedicated to plants.
  - **In 2006,** there was the creation of the national technical centre Plante&Cit  on parks and landscaping.
  - **In 2010,** the Terra Botanica theme park was inaugurated.



THIERRY BONNET / VILLE D'ANGERS



## “Cultivated” plants, “natural” plants: great diversity in urban landscapes

**“Cultivated” plants** are used as much for produce (fruit, vegetables, cereals) as for quality of life (parks developed by people’s knowhow). There is a difference between Horticulture (“vegetal spécialisé” in French) and Field crops (“grandes cultures” in French):

- **Horticulture:** high added-value plant production, characterised by a significant need in terms of production (labour, investment, etc.). It includes the production sector: ornamental plants, trees and shrubs, fruit, vegetables, wine, seeds, medicinal plants and herbs, cider, tobacco. I.e. the jobs of horticulturalists, nurserymen, arboriculturalists, market gardeners, vine growers, seed producers, etc.
  - **Field crops** for agriculture including: wheat, maize, sunflower, soya, etc. (Angers creates and produces varieties and seeds for these crops).
- + **“Natural” plants** covers natural landscapes and areas (e.g. the Basses Vallées Angevines, the Ardoisières, gardens and landscapes along the Loire, etc.).

## Unique territory and knowhow: an industry concentrated around the greenest city in France:

Although history and geography contributed to giving a particular meaning to the word “plant”, the term means more than a simple natural resource, and is synonymous with the knowhow of the Anjou region.

- + **Omnipresence of plantlife:** Angers is classified as being “the Greenest City in France” (Observatoire des Villes Vertes, 2014 and 2017). Each inhabitant lives fewer than 500 meters from a park. The figures talk for themselves. The City manages 43 major parks, 55 ha of green spaces, 1,000 ha of natural areas, 110,000 trees, and 1,000 planted areas in the city. Angers has also been awarded “4 Flowers” and “Golden Flower” in the Concours des Villes et Villages Fleuris (Towns and Villages in Bloom). 6 parks in Angers and its surroundings have qualified as “Ecojardins”.
- + **An exceptional sector:** Angers is where the future is being prepared in terms of production, research, training, innovation, reference institutions and organisations, trade fairs and professional conferences, plant practices in the city. Researchers and companies have made Angers a reference on a national, European and even worldwide scale. Laboratories in Angers are heading up European and international research projects (apples, carrots, roses). In 2022 Angers will welcome the International Horticultural Congress.



# Leading economic sector

## a concentration of players unique in Europe

Multiplicity, groups, cross-disciplinary approaches, multidisciplinary and proximity... The meshing of the players in the sector in the Angers region is remarkable and fosters encounters, innovation, mutualisation, visibility and dynamism.

## Angers, THE reference territory

VEGEPOLYS and Plante&Cité :  
two worldwide and national networks

These two structures are located at the crossroads of research, training, experimentation, knowledge transfer and innovation.



### + VEGEPOLYS: International competitiveness cluster dedicated to plants

Grouping together more than 400 members (companies, research and training institutions), VEGEPOLYS aims to develop innovative projects which will strengthen companies' competitiveness. Since 2005, more than 365 innovative projects have been labelled by the cluster.

In response to the current challenges in society, VEGEPOLYS pursues two main objectives:

- Plant production with less inputs and more favourable impacts on biodiversity, health and environment.
- Plants making the difference and leading to new markets.



### + Plante&Cité: the national technical centre on parkland and landscaping

Focusing on green areas, parks and landscaping, Plante&Cité was set up in 2006 as part of the VEGEPOLYS cluster. The centre now has more than 500 member structures throughout France (authorities, companies, consultants, research and training). The president is the Mayor of Angers.

Its missions are:

- To innovate for sustainable development, supporting the evolution of professional practices
- To acquire new references, with studies and experiments (around 30 per year)
- Mutualising knowledge, through scientific and technical intelligence along with exchanges of information

Its actions are based around 6 themes: Agronomics and urban land, Integrated organic protection and management of spontaneous plants, Choice of plants, Economics and management, Ecology and biodiversity, Plants – landscape – town planning.



## European- and national-scale organisations and institutions: rooted in Angers



+ **The Community Plant Variety Office (CPVO):** an agency of the European Union which manages, for the member states, the system for protecting industrial property on plant varieties (plant certificates). Almost 60,000 applications have been made since 1995, meaning almost 3,000 per year.



+ **Variety and Seed Study and Control Group (GEVES):** an official organisation, which is unique in France, ensuring expertise on new plant varieties and the analysis of the quality of seeds. GEVES has an official analysis laboratory: the National Seed Testing Station - SNES.



+ **Plant Health Laboratory (LSV - ANSES):** laboratory of the French Agency for Food, Environmental and Occupational Health and Safety – ANSES.

- + **French National Office for Plant Breeders' Rights (INOV):** delivers plant variety rights and other official documents corresponding to varieties which satisfy the legal requirements.
- + **Permanent Technical Committee for Plant Breeding (CTPS):** consultative committee consulted for registration in the Journal Officiel of each new variety in France.
- + **French Environment & Energy Management Agency (ADEME):** national head office.
- + **French Inter-professional Group on Seeds and Plants (GNIS):** regional office for western France.
- + **Territorial Delegation of the National Institute of origin and quality (INAO):** Val de Loire office.
- + **Regional horticultural experiment station Pays de la Loire (AREXHOR):** regional office of the French Technical Institute of Horticulture (ASTREDHOR).

**N.B.: the Bureau Horticole Régional des Pays de la Loire (BHR)** is the organiser of the Salon du Végétal. This was created by producers in the Pays de la Loire to have an advice service which was adapted to their needs.

## Professional trade fairs and encounters: an inevitable destination



+ **The SIVAL - World-class trade fair for plant production** welcomes more than 22,000 visitors and had its 31<sup>st</sup> edition in 2017. This international event is unique in France. It is a showcase for materials and services for plant production as a whole (fruit and vegetables, seeds, medicinal plants and herbs, cider, ornamental horticulture). Other activities take place during the Salon, including the "SIVAL Innovation" and "AGreenStart-up" competition, and events on jobs, company visits, etc.

- + **The Plants Week** (3<sup>rd</sup> week in January) is focused on the future and innovation in plants. It is supported by the SIVAL / the "Vegepolys International Business Event" / Scientific conferences (including the "Rencontres du Végéta" which take place every two years). The complementarity of the activities (exchanges, business partnerships, intelligence, discovery, feedback on work, etc.) develop synergies and are an unparalleled event in France for all international and French players in the world of plants.
- + **The Salon des Vins de Loire** welcomes almost 9,000 visitors a year (31<sup>st</sup> edition in 2017). Its aim is to encourage commercial encounters between exhibitors (showing the diversity of the Loire vineyards), and visitors (wine buyers from France and abroad).



+ **Angers is also the site of numerous professional events based around plants:** international conferences, congresses, green visits...

After having welcomed 31 editions of the Salon du Végétal (more than 12,000 visitors in 2016), the creation of a new professional encounter, Plant Event, is under preparation for 2018.

Finally, in 2022, Angers will welcome the International Horticulture Conference (specialised plants), having been chosen over several world-class candidates, including Beijing.

## Active support of local authorities: support from Angers Loire Métropole

A sector of excellence for the Anjou, the plant industry benefits from the clear support of the local authorities concerned. Alongside other public financing, Angers Loire Métropole and its economic development agency ALDEV actively contribute to supporting the sector in various ways:

- + **Financial support (operations and/or investment):** higher education and research institutions, the Objectif Végétal Research-Training-Innovation programme, VEGEPOLYS, Plante&Cité, organisation of trade fairs and events for professionals, people involved in employment or professional reintegration related to the sector, etc.
- + **Support for economic development**
  - **agricultural sector:** implementation of the “Projet Agricole” in conjunction with the Chambre of Agriculture Maine-et-Loire
  - **jobs/training:** events designed to match up supply and demand (e.g.: “Jobs Forum”), territorial management of jobs and skills (including experimental actions designed to secure seasonal workers in the plant sector)
  - **business installation:** accompanying companies in setting up new companies strategically interested in plants in the economic fabric...
- + **Support for “cross fertilisation” blending plants and digital/creativity**

Angers Loire Métropole and ALDEV pay particular attention to projects offering the plant sector a new dynamic through the digital and creative worlds. Such projects are, for instance:

  - **“Longuenée Tech”:** the new commune of Longuenée-en-Anjou has volunteered to become a test territory to facilitate the welcoming of digital companies searching for rural and agricultural areas to carry out their experiments.
  - **Conferences on “connected agriculture”:** these meeting, organised each year by ESA – the Ecole Supérieure d’Agricultures since 2015, analyse changes relating to digital development in agriculture: changes in jobs, new practices, etc.
  - **VEGEPOLYS competition:** in 2017, this rewarded the best initiatives of young companies on two themes: digital agriculture and/or urban agriculture.
  - **Strategy for “Creativity, Plants and Quality of Life”:** ALDEV coordinates and/or supports actions designed to put forward the most creative and attractive plant experiences.



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# Training, Research, Innovation

## Training offer dedicated to plants: first French hub

With 2.500 students studying in around 30 courses going from initial qualifications to doctorates, in Angers it is possible to follow a complete course based on plants. The following establishments are historically rooted in the area:

- + **Angers le Fresne**: secondary school for general and agricultural training, continuing education and agricultural promotion
- + **Edgard-Pisani**: professional agricultural sixth form college and vocational training centre
- + **Campus de Pouillé**: agricultural and horticultural establishment under private contract
- + **University of Angers**: faculty of sciences and University Technical Institute
- + **Université Catholique de l'Ouest (UCO)**: Faculty of Sciences (courses in environmental studies)
- + **Ecole Supérieure d'Agricultures (ESA)**: higher education and research in agriculture, food, territories and markets
- + **Agrocampus Ouest – Angers Centre**: higher national institute for agronomic, food, horticultural and landscaping sciences
- + **Centre National de Promotion Horticole (CNPH)**: vocational training centre for plant and agriculture studies. In 2015, it merged with **la Piverdière** which is specialised in floristry and decoration

**N.B.:** The College of International Agro-Development (ISTOM), currently based near Paris has decided to settle in Angers from September 2018 onwards, with the construction of a building dedicated to the school.

## Research players: shared strategies

450 researchers, researcher-teachers, engineers and technicians are involved in the plant sector in Angers. All the tertiary teaching and research establishments are associated:

### + The Federative Research Structure on Plant Quality and Health (SFR QUASAV)

This groups together 380 people, 150 of which are researchers and teacher-researchers, and 60 doctoral students. The SFR has teams based around a scientific project structured around 3 themes:

- sustainable management of plant health
- biology, quality and health of seeds
- quality of specialist plant production

The SFR QUASAV is composed of 9 research units, with teams from: the French National Institute for Agricultural Research (INRA), Agrocampus Ouest, University of Angers, University of Nantes, Ecole Supérieure d'Agricultures, French Agency for Food, Environmental and Occupational Health & Safety (ANSES). It also has partners including the Variety and Seed Study and Control Group (GEVES) and the R&D centre of VEGEPOLYS.



### Structure Fédérative de Recherche QUALité et Santé du Végétal



### UNITÉS PORTEUSES

UMR IRHS (INRA-AGROCAMPUS OUEST-UA)  
EA SIFCIR (UA-USC INRA)  
EA SONAS (UA)  
EA LBPV (UN)  
UP GRAPPE (ESA-USC INRA)  
UP LEVA (ESA-USC INRA)  
UP EPHOR (AGROCAMPUS OUEST)  
UNITÉS BVO-LSV (ANSES)  
UE HORTICOLE (INRA)

### UNITÉ ASSOCIÉE

ÉQUIPE EGI DE L'UMR ICEPP

### PARTENAIRES

ÉQUIPE PRP DE L'UR BIA  
GEVES  
VEGEPOLYS

#### + **The Joint Research Unit “Research Institute of Horticulture and Seeds” (UMR IRHS)**

This brings together 235 people in all, including 91 researchers and teacher-researchers, and 35 doctoral students.

This unit of the SFR QUASAV is under the control of the INRA, Agrocampus Ouest and the University of Angers and has the ambition of reaching and strengthening an international position of excellence in fundamental and strategic questions of the biology of horticultural products and seed production. It has been designed to implement integrative biology, coordinating the expertise of geneticists, selectors, phytopathologists, physiologists, biochemists, modellers and statisticians. The institute is organised in 3 divisions and 13 research teams, built up around their scientific projects, while mutualising their technical resources and expertise.

#### + **Other research laboratories are involved in plantlife**

These include the Angevin Research Group in Economics and Management (GRANEM), the Landscape & ecology unit, and also private laboratories. Mathematicians, automaticians, IT specialists and historians also provide their expertise on plant science.

### Objectif Végétal Programme: a European ambition



Since 2014, this partnership approach has brought together, around a joint road map, higher education and research establishments: the University of Angers, heading up the project, Agrocampus Ouest, the ESA, the University of Nantes, INRA and VEGEPOLYS. The objectives of the programme are:

- Training: increasing the attractiveness of the training centres and their links with companies
- Innovation: strengthening the dialogue between research and companies, and economic enhancement of the results of research
- Developing international partnerships

The programme is supported financially by the Région des Pays de la Loire, Angers Loire Métropole and the European Regional Development Fund.

### Campus du Végétal: three new leading edge facilities

#### + **The Maison du Végétal** has been, since 2014, an interface between the world of innovation and the professional sector. Included in it are:

- the team of the VEGEPOLYS cluster
- the team of Plante&Cit , the technical centre for green areas and landscaping

#### + **The Maison de la Recherche** has provided since 2015 no less than 8,400 m<sup>2</sup> of laboratories and office space on the INRA site. The various entities share their knowledge and facilities, with the aim of transferring their experimental research towards companies.

Within the Maison de la Recherche there are:

- 250 researchers, teachers-researchers, engineers and technicians, from 4 laboratories: the IRHS - Research Institute of Horticulture and Seeds (Joint Research Unit with INRA, Agrocampus Ouest, University of Angers), SONAS - Substances d'Origine Naturelle et Analogues Structuraux (University of Angers), GRAPPE - Groupe de Recherches Agroalimentaires sur les Produits et Proc d s and LEVA - L gumineuses, Ecophysiologie V g tale et Agro cologie)
- the mutualised technical plateaux of the Federative Research Structure on Plant Quality and Health (SFR QUASAV)
- the VEGEPOLYS research and development centre
- the team of the Objectif V g tal programme

#### + **The mutualised experimental facilities (INEM)** are an ensemble of 10,000 m<sup>2</sup> of greenhouses and growth chambers with varying levels of confinement, designed for experiments. These facilities (Agrocampus Ouest - INRA - University of Angers) have high-rate phenotyping instruments for whole plants and are a coherent, and very complete, ensemble capable of responding to the demands of the scientific and academic communities as much as to the professionals to whom it is also dedicated. In 2014, 50 % of facilities were renewed and located close to those which were maintained to make up a multi-sectoral and efficient whole.



# Production, Jobs, Companies

Horticultural production (« végétal spécialisé ») in the Maine-et-Loire: a leading position

- + **Horticultural production characterises the agricultural economy and contributes to the notoriety of the Anjou region.** It ensures 1/3 agricultural production for the department on 10% of the surface area and employs 75% of employees. 50% of irrigated areas are for horticultural crops.

Seeds place the department among world leaders. Ornamental horticulture and nurseries are in 2<sup>nd</sup> place in the country, with a broad range of products, arboriculture at n°3 in the country, and vine growing is world renowned with 26 designations.

Source : Chambre of Agriculture Maine-et-Loire – Agricultural database 2015

- + **Employment in horticultural production companies: considerable needs in permanent and seasonal labour**

In Angers Loire Métropole, in 2014, almost 3,000 employees (i.e. around 10% of employees in the department) worked in horticultural production companies, representing 1,180 FTE (i.e. around 13% of FTE in the department).

Distribution in the various sectors:

- 44% in ornamental horticulture and nursery (60% in FTE)
- 27% in fruit trees (12% in FTE)
- 15% in market gardening (15% in FTE)
- 9% in viticulture (3.5% in FTE)
- 5% in various horticultural crops and seed production (9.5% in FTE)

Source : Mutualité Sociale Agricole, 2014 - Seasonal jobs are recalculated in FTE (Full-Time Equivalent)

The number of permanent employees in the Maine-et-Loire is estimated at 400/year, of which there is a need of 150 new employees per year to be found for horticultural business.

Source : Estimation de l'Association Départementale Emploi-Formation en Agriculture de Maine-et-Loire on the basis of the results of the prospective study on needs in employment and skills in regional sectors of agricultural production (AREFA Pays de la Loire, 2013)

In the Maine-et-Loire, it is estimated that seasonal jobs in horticultural production:

- generate 30 to 35,000 contracts per year
- employ between 25 and 30,000 seasonal jobs per year (3 to 4,000 FTE)

These figures vary from one year to another, depending notably on production volumes.

Source : Association Départementale Emploi-Formation en Agriculture de Maine-et-Loire, on the basis of the number of contracts of under 119 days benefitting from exemption from employer charges for occasional workers.

**N.B.: to estimate jobs in the horticultural sector in the urban area**, it should be added to the 3,000 employees horticultural production businesses:

- around 150 business directors whose main production concerns specialist plants
- around 500 gardeners and employees in landscaping companies,
- people covered by the Mutualité Sociale Agricole, working in upstream production businesses (e.g. manufacturers, suppliers of goods and services) and in downstream production businesses (e.g. transformation, marketing, distribution). But also people working in consulting, development, teaching and research.



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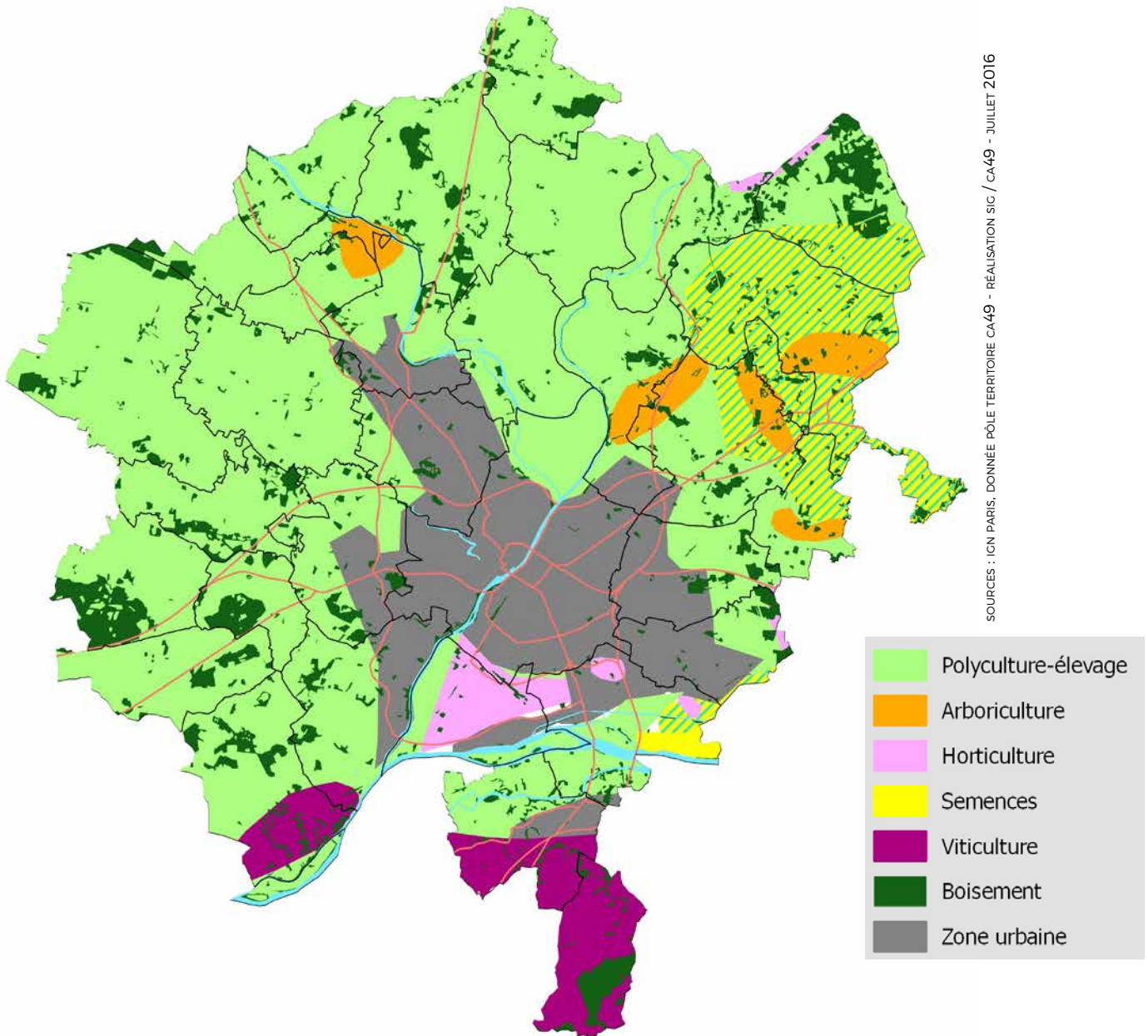


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## Agricultural production areas in the Angers Loire Métropole



### Jobs in the plant sector: actions to create vocations

#### + Challenges for the future of the sector

For specialist plant production companies, it is important to make known occupations and job opportunities, to train future employees, to improve the skills of employees already working, and create loyalty among seasonal workers. Along with this, seasonal workers need to integrate this activity into a professional project.

#### + Work on information on the diversity of training possibilities and jobs

is carried out with school children and/or the general public in various forms: salons, forums and job Olympiads, company visits during occasions such as "Made in Angers", events such as "ExpoFlo" (entertaining discovery of Agrocampus Ouest)... Terre des Sciences (scientific, technical and industrial culture centre) has developed educational tools on plants, such as:

- **School gardens** (developed by the Ministry of Education and the City of Angers): vocations are born early, these gardens can help give school children ideas for the future.
- **L'école du Végétal®** is designed to help secondary school pupils to discover jobs and training courses in the plant world. The pathway is defined in relation to the aims of the teachers, who can then use the support of the educational resources and a series of visits to a laboratory, a training establishment, or one or more companies. Digital tools are used to extend this discovery.





### + **Produit en Anjou ®: a brand to promote the added value of the territory**

In a context of globalised exchanges, the highlighting local knowhow provides development perspectives for the economy and for jobs in fertile and inventive territories. Produit en Anjou is a sign of recognition designed to promote products and services developed in the Maine- et-Loire. Among the members of this brand, a certain number belong to the plants sector, including fruit, flowers, and landscaping among others.



### + **Hortensia d'Angers - Val de Loire ®: a brand highlighting the no 1 European pool for production and sale of hydrangeas**

Arriving from Japan at the end of the 18th century, the hydrangea (*hydrangea macrophylla*), well-known for its large flowers and aesthetic qualities, found a soil and a climate in the Angers region which was beneficial for its growth. With 6 million plants each year, 80 % of which are for export, the Angers region is the European leader for hydrangea production: 25 % of European production comes from within a radius of 30 km around Angers. The City also has 3 reference collections.

The success of local production can be explained by its historical and geographic assets, and also by the knowhow of companies in Angers which have selected new varieties and mastered production with the help of researchers. These companies are grouped together with the association Hydrangea Worldwide.



### + **The Association Pôle Végétal Loire Maine: an area dedicated to specialist plants on the outskirts of Angers**

This association, created in March 2015, is there to bring together the whole range of specialist plant production companies in the horticultural and market gardening area of Sainte-Gemmes-sur-Loire / Les Ponts-de-Cé. It is a unique area combining favourable natural conditions, collective facilities, and close to a large urban centre. Today it has around 30 companies with a combined turnover of €55 m. At the end of 2016, the association received one of the 5 Periurban Innovation Awards from the Ministry of territorial Development, Rural Affairs and Local Authorities, in particular for its actions fostering the competitiveness of the sector, the welcoming of new operators and the management of agricultural land.



# A unique heritage

## first position in the national list of green cities and for quality of life

The notoriety of Angers, including its incomparable quality of life, is based, among other things, on its relationship to plants. The complimentary of “cultivated plants” and “natural plants” is a real asset for the territory, its inhabitants and its tourists. An Agenda 21 for Biodiversity was developed in 2014. The teams from the City of Angers and Angers Loire Métropole are rallying together so that plantlife can contribute to maintaining a high-quality living environment.

## Integrating plants into the urban environment

### The landscaping heritage of Angers and its management: recognition of its exceptional character

The Observatoire des Villes Vertes classified Angers as “the Greenest City in France” in 2014 and 2017 for its:

- + **green heritage:** “With almost 100 m<sup>2</sup> of green space per inhabitant (way above the national average of 48 m<sup>2</sup>) the city is exceptional. In Angers, green spaces (not including woodlands) represent more than 14 % of the total surface area of the city.”

The city also won “4 Flowers” in the Concours des Villes et Villages Fleuris (Towns and Cities in Bloom) and won the “2016 Golden Flower”, the highest distinction in this national competition.

- + **investment in the creation of new landscaped areas and the improvement of existing green spaces:** Angers spends €67 per inhabitant per year on this, i.e. 44% more than the national average and almost 3.5% of the municipal budget.
- + **involvement in managing and promoting plants:** “zero pesticides” campaigns towards individuals, the Maison de l’Environnement, guided tours... The City is developing its green potential and knows how to highlight it. On the scale of Angers Loire Métropole, 6 parks are labelled “EcoJardin” in recognition of their benchmark ecological management. Highly involved in Plante&Cité, which is chaired by the Mayor of Angers, the City uses its planted areas to experiment with new solutions (it is a pioneer city in terms of large-scale eco-grazing, mycorrhisation tests, mixing of soil and stones for planting trees, etc.) and to welcome plant collections (national hydrangea collection, conifer collection, oak collection, etc.).
- + **green waste management:** green waste is optimised and alternative techniques are encouraged with initiatives such as a system where composters are lent free of charge to individuals, the use of eco-friendly mulches, the “vegearth” technique, or wood-burning water boilers.



## Urban development: conservation and recognition of the landscaping heritage

- + **Designing urban developments and identifying green and blue pathways** (development tools designed to reconstitute ecological continuities and biodiversity reservoirs) optimising the preservation of the natural heritage and its articulation with the built heritage. There are also opportunities to carry out experiments: along the tram line various plant ranges have been tested. The City of Angers and Angers Loire Métropole have also included in all their public tenders insertion clauses, several urban renewal operations have contained “plant and green spaces” projects.
- + **The “Plants in the Heart of the City” project: enhancing plants in public areas**

From the Avenue Jeanne-d’Arc to the Promenade du Bout-du-Monde, passing through the Place du Ralliement, plants wind their way through the centre of Angers like a green path. Above and beyond their tourist interest and the beautifying of the environment for inhabitants of the city, the initiative is also designed to confirm the plant particularity of Angers, particularly the diversity and quality of its horticultural sector. To steer the project and bring consistency, the City has engaged a multidisciplinary team: landscapers, town planners, scenographers, consultants from Agrocampus Ouest and a technical office. The first phase of this project, the Promenade du Bout-du-Monde was totally redeveloped and inaugurated in June 2016, the Avenue Jeanne d’Arc was redeveloped in 2017.
- + **The “Angers Cœur de Maine” project: enhancing the centre and reconnecting with the river**

The idea is to strengthen the new dynamics underway in the centre of Angers while revealing the heritage, human and natural riches present at the riverside.

In the short term, the focus will be on two sites where particular attention will be paid to the place of nature in the city:

  - **Centre-ville Maine** : participating in redynamising the city centre with the creation of a new tram line
  - **Quai Saint-Serge** : organising development in this area, which, like the Cours Saint Laud, will be a natural extension of the centre of Angers
- + **“Angers Garden Station”: a first in France**

“Gares et Connexions”, the branch of SNCF railways in charge of developing and running stations, has commissioned artist and designer Alexis Tricoire to create, a work at the Gare St Laud, combining design, modernity and plants. The project was inaugurated in July 2017 with the support of the City of Angers, the Région des Pays de la Loire, VEGEPOLYS and Val’hor.



# Raising awareness of inhabitants and tourists

## Urban agriculture and gardening: for young and old

### + Gardens as educational tools

School time, extracurricular activities, school camps are all special moments for developing activities focusing on plants, gardening and the environment: gardening practices, building insect hotels, garden visits, observing nature, cooking workshops, etc. School gardens, or even other gardens, have also been developed by the City, which has also created an educational guide for sustainable development.

### + Urban agriculture, a garden for all the “gardener-inhabitants”

The aim of the City of Angers is to provide inhabitants with a possibility to access a planted area that they can take care of themselves. Various possibilities are on offer, with the support of the City's services who will operate at various levels (delivering authorisations, observance of the charter of commitment, working on the 1st green areas, gardening advice, etc.).

- **Family gardens:** these are individual, food-producing gardens which account for around 1,000 plots, from 100 m<sup>2</sup> to more than 200 m<sup>2</sup>, spread over 10 sites. Two thirds of these plots belong to the City, which supports 8 associations for family gardening, including a rehabilitation association.
- **Gardens at the foot of high-rise buildings:** Since 2003, land at the bottom of social housing projects in priority areas have been made available by the City of Angers. The idea is for local residents to cultivate them (vegetables and/or flowers). Management of these gardens is carried out by a rehabilitation association.
- **Shared gardens:** These are areas open to the public which are run by an association for food production. The plot is collective, without fencing, and people can come in to pick produce.
- **Mini-gardens:** These successful very small gardens have been set up, on the request of residents, in public areas (at the bottom of walls, or of trees). These gardens are cared for by individuals. In 2015, with the support of Angers Loire Métropole and ALDEV, a “GreenPods” experiment (gardens fixed to anti-parking posts which can interact with QR codes) was organised with several shops in Angers. These prototypes, designed by start-ups, got feedback from shopkeepers in Angers.
- **“Fleurissons Angers” (Planting Angers) Competition:** This competition has several categories (mini-gardens, balconies, shared gardens, family gardens, etc.), and enabled the City to reward people who have taken part in decorating Angers with plants visible from public areas.



PHILIPPE NOISETTE / VILLE D'ANGERS



## Sites and events: a unique offer to discover plantlife

Several players and projects have contributed to promoting, revealing and loving plantlife through programmes as varied as scientific culture, environmental protection, gardening, the arts, economic discovery, the natural heritage, etc.

### + **Terra Botanica, a unique theme park in Europe**

The park was born in 2010. With 275,000 plants from 6 continents, it takes you on a journey around the world of plants, and at the same time showcases the wealth of the economic fabric of the Anjou, from heritage to innovation. Every year, a “star plant” from the Anjou is highlighted. In 2017, it was the rose of Doué-la-Fontaine. Games and events are also on the agenda, and with the living lab (VEGEPOLYS, TERRALIA and ESA), visitors can give their opinions on a product or prototype developed by a company. Finally, the park also has a business centre which welcomes conferences, seminars, conventions, executive meetings, general assemblies, etc. all year round. In 2016, the Tripadvisor travel site classified Terra Botanica in 10th position in the French population’s favourite theme parks.

### + **Terre des Sciences (scientific, technical and industrial culture centre)**

As part of its actions in the educational world (from primary schools to universities) and the general public, the centre, with the support of its local partners, is there to help people discover the plant sector, with exhibitions, lab and company open days, conferences, “Plants & Tourism” activities (partnerships with Terra Botanica, the Château d’Angers, the Mission Val de Loire...).

### + **Natural History Museum**

The Natural History Museum curates, studies and holds exhibitions concerning its numerous collections: almost 10,000 pieces and documents, including 2,500 birds, 20,000 shells and 50,000 fossils. The herbarium at the Gaston Allard Arboretum explores the development of French flora (350,000 samples).

These collections are landmarks in the local natural heritage and they invite us to assess the impact of mankind on their environment.

So that each citizen can be involved in activities for discovering the natural heritage, the museum runs participative science programmes and collaborative workshops:

- **“Wildflowers in my street”**: in partnership with the National Museum in Paris, this programme makes it possible to recognise wildflowers in the city and is designed to gather data to have a better understanding of the biodiversity in the city, assess the role played by urban development on the quality of biodiversity and understand how to live with this spontaneous vegetation.
- **“Digitisation of herbariums”**: the e-ReColNat programme proposes, after the national herbarium, to digitise regional herbariums, in particular those of museums and universities, so that they can be consulted by botanists from around the world and the general public. The herbarium of the Muséum d’Angers, which contains the biggest collection in the region, could, by 2018, with the help of volunteers, digitise up to a quarter of its 350,000 samples.

### + **Maison de l’Environnement et du Développement durable and its Organic Garden**

Since its creation in 1990, the Maison de l’Environnement et du Développement durable has been located in the park by the Lac de Maine, a natural area near city centre. It is an awareness raising tool on the environment and sustainable development for all. With varied approaches, the activities on offer concern themes such as biodiversity, energy, water, and travel, among others.

The Organic garden was created in 2000 with the aim of showing that it is possible to produce fruit and vegetables without using synthetic fertilisers or pesticides, by enabling greater biodiversity and still maintaining an aesthetic garden. It is an ideal place to find ideas for gardens, for advice on how to find substitutes for chemicals, and also to learn how to garden.

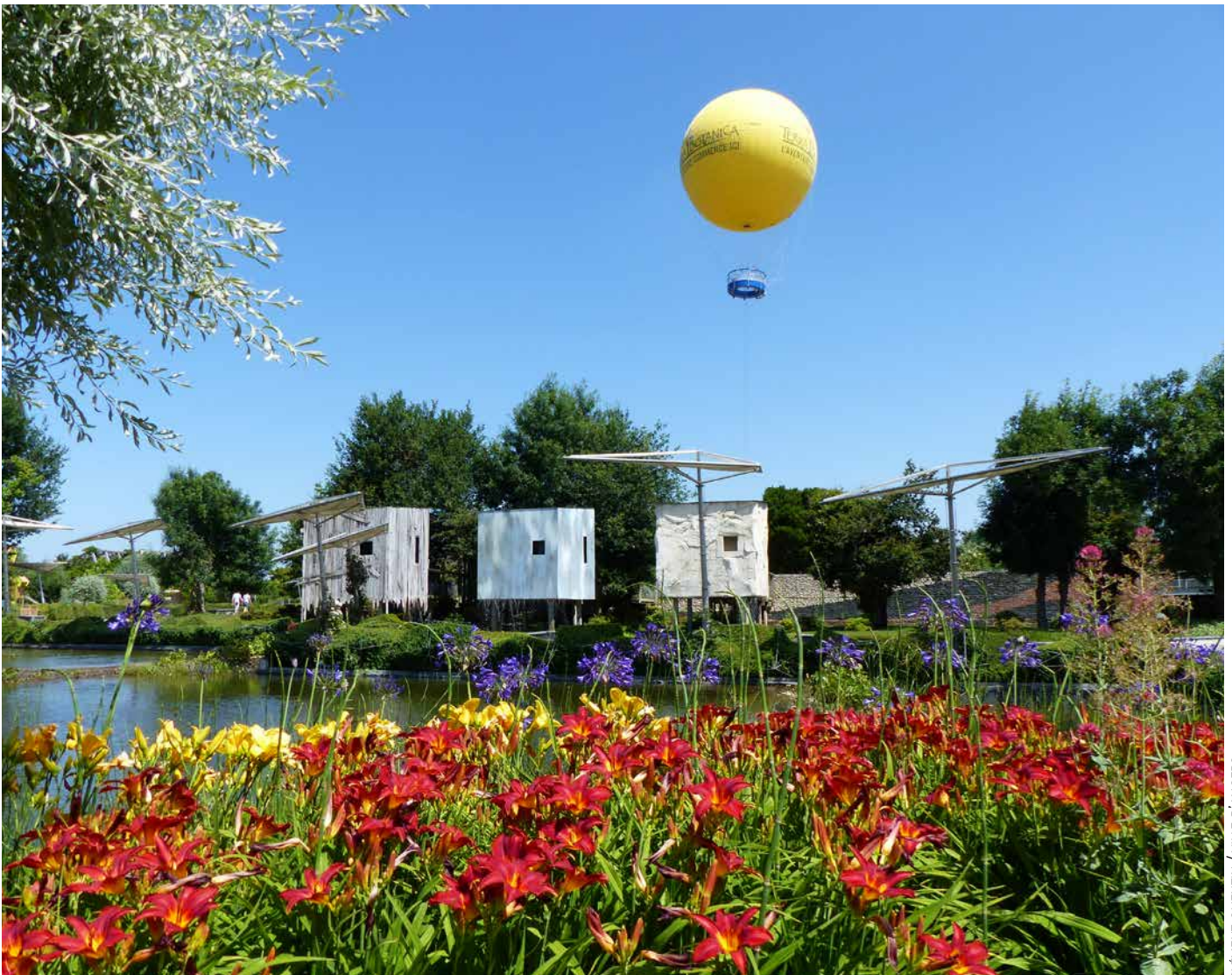
### + **Jardins d’Expression, highlighting plants in an educational way**

Initiated in 2013 by Angers Loire Métropole and the City of Angers, the aim of this competition is to create an encounter between people and nature through the creativity of participants, and enhance heritage and knowhow of people in the Anjou through plants. Using a given theme, students from the schools of horticulture, landscape gardening and design are invited to give free rein to their imagination. The winning projects are created in the old vegetable garden of the Parc de Pignerolle in Saint-Barthélémy-d’Anjou. The winning garden is then exhibited the following year in the City of Angers. Added to the gardens designed by students are gardens presented in palettes, made by pupils from primary and secondary schools, or in out of school activities, with the aid of Terre des Sciences. There is also a garden for professionals to showcase their knowhow.

### + Without forgetting...

























The Angers region is influential in terms of plants. In particular, it has:

- **Public parks and gardens**, some of which have guided tours: the 12 public parks and gardens managed by Angers and Angers Loire Métropole, the parks of the communes in the agglomeration, private parks, etc.
- **Key parks in the department**: Camifolia (Chemillé), Parc oriental (Maulévrier), Chemins de la Rose (Doué-la-Fontaine)
- **Châteaux**: the gardens of the Château d'Angers, some of which have QR codes, the cucurbitaceae collection at the Château de Montriou (Feneu)
- **Discovering businesses**: liqueur manufacturers Carré Cointreau and Espace Giffard, company visits (including "Made in Angers" in February), oeno-tourism sites and events (including "Tempo Vignes" and "Food'Angers – Vins de Loire & Gastronomie")
- **Riverboats during the summer**
- **Development of green routes** in "UNESCO", "Natura 2000", and Protected Designation of Origin vineyards areas: Loire à vélo, Vélo Francette, green loops
- **Interpretation paths**: in Angers, Savennières, Béhuard, Bouchemaine, Villevêque, Briollay, Sainte-Gemmes-sur-Loire, Écouflant...
- **Events**: organised regularly or on an occasional basis in the area, such as Les Printemps de Terra, ExpoFlo, Accroche-Cœurs (2015 edition focusing on plants), La Balade du Roi René, 2017 "Jardins en Val de Loire" cultural season, gardens open to the public for national events such as the "Rendez-vous aux jardins" or the "Fête de la nature"
- **Projets "Arts & Plants" projects**: the Jardin Sonore in the Hauts de Saint Aubin, the floating gardens on "La Plateforme" temporarily exhibited on the Etang Saint Nicolas, and then on the Maine





## USEFUL LINKS - GLOSSARY

NAME OF THE ORGANISATION	FRENCH ACRONYM	WEBSITE (  = english version )
Agrocampus Ouest		<a href="http://www.agrocampus-ouest.fr"></a>
Angers Loire Développement	ALDEV	<a href="http://www.angers-developpement.com"></a>
Angers Loire Métropole		<a href="http://www.angersloiremetropole.fr"></a>
Bureau Horticole Régional des Pays de la Loire	BHR	<a href="http://www.bhr-vegetal.com"></a>
Campus de Pouillé		<a href="http://www.campus-pouille.com"></a>
Centre national de promotion horticole Piverdière	CNPH	<a href="http://www.cnph.fr">www.cnph.fr</a> <a href="http://www.piverdiere.fr">www.piverdiere.fr</a>
Chambre d'agriculture des Pays de la Loire		<a href="http://www.pays-de-la-loire.chambres-agriculture.fr"></a>
College of International Agro-Development	ISTOM	<a href="http://www.istom.fr"></a>
Community Plant Variety Office	CPVO	<a href="http://www.cpvo.europa.eu"></a>
Destination Angers		<a href="http://www.destination-angers.com"></a>
Ecole supérieure des agricultures	ESA	<a href="http://www.groupe-esa.com"></a>
Federative Research Structure on Plant Quality and Health	SFR QUASAV	<a href="http://www.sfrquasav-angers.org"></a>
French Agency for Food, Environmental and Occupational Health & Safety > Plant Health Laboratory	ANSES LSV	<a href="http://www.anses.fr"></a>
French Environment & Energy Management Agency	ADEME	<a href="http://www.ademe.fr"></a>
French Inter-professional Group on Seeds and Plants (délégation régionale grand ouest)	GNIS	<a href="http://www.gnis.fr"></a>
French National Institute for Agricultural Research	INRA	<a href="http://www.angers-nantes.inra.fr"></a>
French Technical Institute of Horticulture > Regional horticultural experiment station	ASTREDHOR AREXHOR	<a href="http://www.astredhor.fr"></a>
Hydrangea world wide	HW <sup>2</sup>	<a href="http://www.hydrangea-hortensia.eu"></a>
International Horticultural Congress 2022	IHC	<a href="http://www.ihc2022.org"></a>
Loire Valley Wine Trade Fair		<a href="http://www.salondesvinsdeloire.com"></a>
Lycée Angers Le Fresne		<a href="http://www.le-fresne.paysdelaloire.e-lyco.fr"></a>
Lycée Edgar Pisani		<a href="http://www.pisani49.paysdelaloire.e-lyco.fr"></a>
National Institute of origin and quality (Val de Loire office)	INAO	<a href="http://www.inao.gouv.fr"></a>
Objectif Végétal Programme		<a href="http://www.objectifvegetal.univ-angers.fr"></a>
Plante&Cité		<a href="http://www.plante-et-cite.fr"></a>
Produit en Anjou		<a href="http://www.produitenanjou.fr"></a>
Research Institute of Horticulture and Seeds	IRHS	<a href="http://www.angers-nantes.inra.fr/irhs"></a>
Terra Botanica		<a href="http://www.terraborotanica.fr"></a>
Terre des Sciences		<a href="http://www.terre-des-sciences.fr"></a>
Université catholique de l'ouest	UCO	<a href="http://www.uco.fr"></a>
University of Angers	UA	<a href="http://www.univ-angers.fr"></a>
Variety and Seed Study and Control Group > National Seed Testing Station > Permanent Technical Committee for Plant Breeding > French National Office for Plant Breeders' Rights	GEVES SNES CTPS INOV	<a href="http://www.geves.fr"></a>
Végépolys		<a href="http://www.vegepolys.eu"></a>
Ville d'Angers		<a href="http://www.angers.fr"></a>
World-class trade fair for plant production	SIVAL	<a href="http://www.sival-angers.com"></a>

## FURTHER INFORMATION: 2 PUBLICATIONS (IN FRENCH)

- + **Du roi René à Végépolys - Les plantes naissent et fleurissent en Anjou**  
by Jean-Luc Gaignard, Co-édition Terre des Sciences - Terra Botanica - Végépolys, 180 p, 2016
- + **Les Parcs & Jardins de l'Anjou au fil de l'histoire**  
by Isabelle Levêque, Département de Maine-et-Loire, Edition Lieux-Dits, 252 p, 2016  
2<sup>nd</sup> Prix du European Gardenbook Award / meilleur livre européen de jardin



LÉONARD DE SÈRRES / VILLE D'ANGERS

## Plants, a speciality in Angers for centuries!

The horticultural identity of Anjou is not only embodied in its exceptional natural heritage, but also its precious knowhow and ability to innovate which have developed over the course of history. Today, the territory of Angers stands out on account of the concentration of players for the whole plants sector: training, research, innovation and businesses. Angers is the meeting point for students, researchers and investors to continue

developing this leading-edge activity: an activity in direct contact with the plant challenges of tomorrow (quality of crops in the face of climatic and health conditions, environmental concerns, economic and social changes, etc.). In this context, public policy in Angers is designed not only to foster the sector, but also to bring even more dynamism for the inhabitants and visitors of the Greenest City in France.

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CONTACT: Anne Robert, [arobert@angers-developpement.com](mailto:arobert@angers-developpement.com)

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**Aldev is the economic development agency of Angers Loire Métropole. Aldev is the gateway for entrepreneurs, businesses, communes and economic players for their development or installation projects, as well as the point of contact for questions of integration, employment, recruitment, innovation, research or higher education.**

122, rue du Château-d'Orgemont - CS 10406 - 49104 Angers CEDEX 02

**+33 2 52 57 01 00**, [contact@angers-developpement.com](mailto:contact@angers-developpement.com)

[www.angers-developpement.com](http://www.angers-developpement.com)

