



**SIVAL**  
SALON INTERNATIONAL  
DES TECHNIQUES DE PRODUCTIONS VÉGÉTALES

14 - 15 - 16 january 2020



ANGERS  
France

**Get connected**  
to the crop productions  
of tomorrow

JANUARY 2020

An event  **DESTINATION  
angers**

Support from  **Région  
PAYS DE LA LOIRE**



angers Loire  
métropole  
communauté urbaine



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**ANGERS**  
France



# **+** **+** **+** **+** **+** **DESTINATION** **angers**

Destination Angers is the agency that is responsible for increasing the region's influence, and whose principal aim is to optimise the conditions for the coordinated and coherent development of business tourism and the accreditation of the region.

Destination Angers covers a wide range of services and manages the following sites :

- > Parc des Expositions
- > Centre de Congrès
- > Office de Tourisme

It is within this context that Destination Angers owns and organises several events for the general public, or for professionals, including the SIVAL.

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





# 9 events organised at the Parc des Expositions in Angers

## **The SIVAL - The International Show for specialist plant production (January)**

The showcase for innovation in the specialist plant production sector.

25,000 visitors- 700 exhibitors

2 Concours focusing on innovation

+ than 45 nationalities - 1 business convention

+ than 60 conferences

And also ...

> **Le Salon des Vins de Loire** (February)

> **Angers Ciek Fest** (April)

> **La Foire d'Angers** (end of April – beginning of May)

> **Le Salon du Végétal** (September)

> **Le Salon de l'Habitat** (September)

> **Salon du Cheval** (November)

> **Salon de la Boucherie** (October/every 2 years)

> **Forum de l'Orientalion** (December/every 2 years)





## Bruno DUPONT, President of the SIVAL

### Get connected at the SIVAL

The 34th edition of the SIVAL will be taking place from the 14<sup>th</sup> January 2020 at the Parc des expositions in Angers. This latest edition will be welcoming Fruit 2050, an event based around the food sector, and that took place for the first time at the 2018 SIVAL. Organised every two years, this event revolves around three highlights: the Végépolys Valley-GIS Fruit Symposium will be tackling the subject of climate change; an international focus on climate change in the form of a conference presented by the SIVAL's International Press Club; and the CTIFL - Fruit Production Forum, which will be looking

at climate linked changes in future practices. I'm sure that you have now worked out that the climate is the major challenge that we will be facing in the years to come, and it will be at the heart of this latest edition!

On a different note, the SIVAL is continuing its expansion this year, with the show area increasing by 4000 m<sup>2</sup>. This development echoes the desire of the SIVAL to meet the strong demand from both new French exhibitors, and also from abroad. If the SIVAL has chosen to become more international and this strategy has now been justified with the increase in the number of foreign exhibitors and visitors. Furthermore, the SIVAL has chosen a policy of partnerships, aiming at foreign shows, with the intention of sharing know-how. This is the case with the Italian MACFRUT Show with whom the partnership was launched during the 2019 SIVAL. This partnership is already led to the organisation of International Asparagus Days, a hyper specialist international event aimed at the asparagus sector, in Angers at the end of October 2019, and the presence of the SIVAL at the last MACFRUT Show. MACFRUT will, in turn, be present at the 2020 SIVAL on a dedicated stand. International at the SIVAL also means the VIBE business convention, co-organised with Végépolys Valley, which welcomes numerous companies from the plant production sector each year who wish to discuss and create business opportunities in our region. Finally, new delegations are expected and they will be coming to meet the exhibitors at the SIVAL.

The SIVAL would not be nearly as attractive if it hadn't decided to look to the future and feature innovation. This is exactly what this show has stood for since its creation, pursuing its aim to exhibit all of the most innovative techniques from the specialist plant production sector. The SIVAL Innovation Concours and the AgreenStartup are the pacesetters, rewarding the most innovative and pertinent projects for the sector's future each year. This all goes to prove just how dynamic the members of the specialist plant production sector are, and how they focus on the future to meet numerous challenges.

The SIVAL, equally, remains a place where discussions and meetings can take place, thanks to the numerous conferences and speeches by experts at the Forum. The SIVAL welcomes 140 conference speakers each year. Even if the SIVAL continues its expansion and development at an international level, it remains a friendly Show in an area where specialist plant production is renowned for its know-how and excellence.

# ÉDITION



# CROPPINT IN THE GRAND OUEST REGION

The Pays de la Loire Region has a concentration of the different specialist plant production sectors that is unique in Europe.

PAYS DE LA LOIRE



**4000**

Businesses in the plant production sector



**25 500**

farms



**50 000**

jobs linked to agricultural production

## IN MAINE ET LOIRE,

Specialist plant production equals :

- 1/3 of the department's agricultural production
- 10% of the agricultural surface area
- 75% of the agricultural workers
- The department is amongst the world leaders for seed production
- 2<sup>nd</sup> place nationally for horticulture and nurseries
- 3<sup>rd</sup> place nationally for tree production

## ANGERS

- Home of the Vegepolys Valley International Centre for competitiveness that is dedicated to plant production.
- Region for specialist plant production events :
  - > International Asparagus Days (29th and 30th October 2019 at the Parc des Expositions in Angers)
  - > ESAfoodtech (21st November 2019)
  - > the SIVAL (January 2020 at the Parc des Expositions in Angers)
  - > the Végépolys Symposium (January 2020 at the SIVAL)
  - > le Végépolys International Event - VIBE (January 2020 - Business convention at the SIVAL)
- Food'Angers (from the 31 January to 9 February 2020)
- Salon des Vins de Loire (3-4 February 2020)
- Salon du Végétal (8-10 September 2020)
- Angers, home of plant production will be welcoming the International Horticultural Congress in 2022

L'ANJOU



## FRENCH CENTRE FOR TRAINING AND RESEARCH IN PLANT PRODUCTION

- > **450** lecturers / researchers / engineers / technicians
- > **90** doctorates/postgraduate doctorates
- > **3 000** students

Since September 2015, the majority of the research resources have been concentrated at the Plant Production Campus in Angers.

- 24,8 M€ of investment
- 8400 m<sup>2</sup> of laboratories and offices
- 10 000 m<sup>2</sup> of glass houses and growing chambers
- the Maison du Végétal that houses Vegépolys Valley, International Centre for competitiveness and Plante&Cité



# SIVAL



**700**  
exhibitors



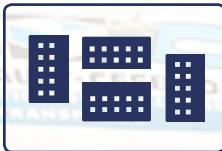
**15%**  
international  
exhibitors



a new exhibition  
hall covering  
**4 000m<sup>2</sup>**



**24 000**  
visitors  
each year



**36 000 m<sup>2</sup>**  
gross exhibition  
area

# THE SIVAL INNOVATION PROSPECTIVE INTERNATIONAL

The SIVAL is resolutely focused on innovation and it will be adopting a forward-looking vision throughout its 34th edition, it will also have a high level of international development. With its increased exhibition area, the 2020 SIVAL will be welcoming new French and foreign exhibitors with specialist know-how, in order to serve the plant production sector. The climate will be a major theme throughout this 34th edition with the biannual international Fruit 2050 event. After a first edition at the 2018 SIVAL, Fruit 2050 will be returning in 2020 and will be focusing on the effect of climate change on specialist plant production throughout the world.

Connected agriculture, urban farming, machinery, varietal innovations, solutions for reconciling economic and environmental performance, and new concepts for distribution will be some of the themes that are going to be well represented at the SIVAL; they will be highlighted, notably, by the Concours SIVAL Innovation and the Concours AgreenStartup. Staying with the forward-looking approach, the conferences and the speeches at the Forum will be echoing the theme of an agriculture that is in progression, and looking towards research for new alternatives in order to meet the national and international challenges facing the specialist plant production sector in the years to come.



This major rendezvous, dedicated to professionals from the European fruit sector will be taking place within the SIVAL. It will be addressing the challenges that will be facing fruit production in the future and will be structured around three highlights.

**Tuesday 14th of January from 14h to 16h**  
**Vegepolys Valley - GIS FRUITS Symposium**

Theme - Fruit production faced with climate change: anticipate in order to act in the future. Simultaneous translation

The vulnerability of fruit production when confronted by climate change is a major preoccupation for the sector, creating an enormous challenge for professionals and the technical and scientific institutes.

Even if some uncertainty exists concerning the climatic predictions, the impact and the differences in comportment are already present and visible in crops, notably the criteria of phenology, fruit quality, and disease emergence.

**1. An overview of French and international research projects in response to climate change: featuring apricots, vines and Corsican clementines.**

- The principal impact of climate change on fruit trees
- Inaki Garcia de Cortazar Aauri - INRA Avignon; Plateforme Agroclim
- Strategies for adapting apricots to climate change in areas that are very hot.
- David Ruiz Gonzalez - CEBAS -[SIC Murcia

- The Corsican Clementine : a case study looking at the consequences of climate change and strategies that have been put into place.
- Olivier Pailly - INRA Corse

**2. Professionals and researchers talk about their experiences and observations and share the strategies that are being explored.**

- Jacques MALAGIÉ, Vergers d'Anjou
- Raphaël MARTI NEZ, Fédération fruits et légumes d'Occitanie
- François CHEVALIER, Gradilis Recherche
- Françoise Besse, CODPLIM

**Tuesday 14th of January from 17h to 18h**  
**Press club – International focus**

Theme : The impact of climate change on specialist crops. Simultaneous translation

The SIVAL is organising its International Press Club, whose vocation is to share information about a given theme, for the first time.

For the Club's 1st edition, a dedicated conference is being organised as part of Fruit 2050; it will be focusing on certain practices, strategies... linked directly to climate change and put into operation in a range of countries. The articles that have been written ahead of the SIVAL by the foreign journalists who are members of the Club, will serve as a common thread throughout the conference. There will be a focus on the following countries: Switzerland, Hungary, Algeria, Morocco, England, Chile, Italy, Germany.

> The journalists will be speaking about their work: to identify the new practices and individuals dealing with climate change.

**Wednesday 15th of January from 10h to 12h30**  
**CTIFL - Fruit Production Forum**

Theme: Will climate change alter our practices in tree production ? Simultaneous translation

Climate change has been confirmed by the international scientific community. By 2050, we will be experiencing a rise in temperature, variation in rainfall as well as an increase in the frequency and intensity of extreme climatic phenomena. What impact will this meteorology have on French tree production? Should we be looking to evolve our production systems from now on ?

- Presentation of the study cc The Agro-food sectors and adapting to climate change and in particular the work carried out by the apple sector in the Val de Loire.

- Audrey TREVISIOL, AD EME Angers.

- The effects of climate change on the bio aggressors in orchards.

- Jérôme JULLIEN, Ministère de l'agriculture, Direction générale de l'alimentation, Sous-directio de la qualité, de la santé et de la protection des végétaux.

- Will we have irrigation restrictions? How can we envisage collective water management?

- M. Mourad HANNACHI de l'INRA AgroParisTech

- The apple, weather sensitive consumption?

- Dragana MILADINOVIC, INTERFEL

- Can we improve and add value to the orchard's carbon footprint?

- Josselin SAINT RAYMOND, Association Nationale Pommes et Poires

# LE SIVAL ET L'INTERNATIONAL

Over the last few years the SIVAL's development has had an international focus. This strategy has had positive results as the SIVAL is registering an increase in the number of foreign exhibitors and visitors each year. The SIVAL is now also present at foreign shows in order to promote the know-how and the dynamism of the French businesses involved in specialist plant production.



**45**  
nationalities  
present



**15%**  
foreign  
visitors

## The presence of Macfrut at the SIVAL

The 3<sup>rd</sup> point of the partnership, Macfrut will be present at the 34<sup>th</sup> edition of the SIVAL with a dedicated stand that will be welcoming Italian businesses that specialise in plant production.

## Discussions and business prospecting

The SIVAL and Vegepolys Valley were present at the Horti China Show from the 19<sup>th</sup> to the 21<sup>st</sup> September at Qingdao. A study tour is planned for businesses from the Angers area.

## Les délégations étrangères

The SIVAL receives foreign delegations wanting to have discussions with the SIVAL exhibitors each year. The 2020 edition of the SIVAL will be welcoming new foreign delegations.

Europe : Spain, Italy, Portugal / Middle East : Saudi Arabia, Egypt, United Arab Emirates / Africa : Senegal, Ivory Coast / Euroasia : Kazakhstan, Russia, China / Latin America : Chile, Mexico.

> In 2020 the SIVAL will be putting a reinforced service for the recruitment of 'Top Buyers' in place.

There are around 80 buyers with a targeted profile and investment projects that will be coming to visit the show.

## Un partenariat avec MACFRUT

SIVAL and MACFRUT, the International show for the fruit and vegetable sector organised in May at Rimini (Italy), was put into place during the last edition of the SIVAL (January 2019), a unique partnership that aims to create synergies between the two organisations and to develop opportunities for business at the two Shows.

This partnership has led to several meetings:

- The SIVAL was present at the Macfrut Show in Italy from the 8<sup>th</sup> to the 10<sup>th</sup> May 2019, with businesses from the region on a dedicated stand.
- On the 29<sup>th</sup> and 30<sup>th</sup> of October 2019, the town Angers was home to International Asparagus Days, a show backed by StlhVeAL, Macfrut and Christian Befve, world-renowned expert in asparagus.

## The workshops for different countries

New for 2020, the SIVAL will be offering workshops aimed at exhibitors who require expert advice on market opportunities in the following countries : Italy, the Gulf States, Russia and Kazakhstan.

## Service de traduction

The SIVAL is offering a range of conferences with simultaneous translation into English. This offer will be completing the Végépolys Valley Symposium which already has this service, and it will enable foreign visitors to take a more active part at the SIVAL.

# TWO MAJOR EVENTS AT THE SIVAL

## ● **Vegepolys Valley GIS Fruits Symposium**

**Tuesday, 14 January, from 14h until 16h at the SIVAL**

**Theme - Fruit production facing climate change : anticipate in order to act in the future.**

The vulnerability of fruit production when faced with climate change is a major preoccupation for the sector, and provides a challenge for the professionals, and the technical and scientific institutes. Even if some uncertainty exists concerning the climatic predictions, the impact and differences in behaviour are already visible in production systems, notably the criteria concerning phenology, fruit quality, and even the emergence of diseases.

## ● **The VIBE**

**Vegepolys International Business Event  
Tuesday 14th January - SIVAL**

A true international business convention, the VIBE is aimed to encourage business, to discuss partnerships, to add value to new projects with the members of Vegepolys Valley, exhibitors and visitors at the SIVAL.

This rendezvous takes the form of personalised meetings lasting 30 minutes at the International Corner of the SIVAL (hall Amphitéa). Since its first edition in 2015 at the SIVAL, the VIBE has enabled more than **1000 BtoB rendezvous** is to be organised with the presence of **460 participants of 45 different nationalities**.

# VEGEPOLYS VALLEY CENTER FOR COMPETITIVENESS



**Vegepolys becomes Vegepolys Valley**  
Vegepolys Valley was created in 2019 with the merger of the two centres for competitiveness Vegepolys and Céréales Vallée Nutravita. This new centre has an international dimension, with a strong territorial base covering 4 regions: Auvergne-Rhône-Alpes, Bretagne, Centre-Val de Loire and the Pays de la Loire and aims to federate the members from throughout the plant production chain, both upstream and downstream.

From its base in Angers, the centre now has 500 members from throughout the plant production sector based around the 7 types of innovation for the most competitive, qualitative, environmentally and health sensitive farmers :

**Competitive plant production, quality, respecting the environment, the health of the consumer and the producers :** 1. Varietal innovation seed and plant performance - 2. Plant health - 3. New technology and practices for production systems.

**The development of food and non-food uses the plants in order to gain in quality, practicality, services and naturalness :** 4. Plants for animal and human nutrition - 5. Preventative nutrition for health, for well-being, for health and cosmetics - 6. Agro building materials and bio transformation of plants - 7. Urban plants.

Thanks to a strong territorial coverage, Vegepolys Valley aims to develop a strong feeling of belonging, and to ease discussions between its members. This new centre will be receiving input from its international partners to advance its research.

## MONDAY 13 JANUARY 2020

- 18:00 - 20:00

Receiving the participants

Welcome cocktail at the Musée des Beaux Arts in Angers

## TUESDAY 14 JANUARY 2020

- 9:00 - 9:30

Opening of the business convention

- 9:30 - 13:00

Personalised BtoB rendezvous (30min)

- 13:00 - 14:00

Buffet

- 14:00 - 16:00

Personalised BtoB rendezvous (30min)

- 14:00 - 18:00

Free time to visit the Show / Vegepolys Valley Symposium Conferences

## WEDNESDAY 15, AND THURSDAY 16 JANUARY 2020

Free days

Independent or guided visit to the show

Conferences with simultaneous English translation.

Free registration using the online platform

<https://vibe2020.b2match.io/>

# THE VIBE

## VEGEPOLYS VALLEY INTERNATIONAL BUSINESS EVENT

The VIBE (Vegepolys Valley International Business Event) is a business convention that contributes to trade prospecting and discussions between foreign companies visiting the SIVAL, the members of Vegepolys Valley as well as the Shows exhibitors. Taking the form of short rendezvous, the VIBE helps encourage business opportunities and international contacts. By initiating these commercial and technological relationships between companies, the VIBE contributes to the regions reputation.

## SINCE 2015, THE VIBE EQUALS



**460**  
participants



**45**  
nationalities



more than  
**1000**  
BtoB rendezvous  
organised

# 1000

potential contacts in plant  
production via the Vegepolys  
Valley networking and the SIVAL



# VIBE

CONVENTION D'AFFAIRES INTERNATIONALE

Mardi 14 Janvier 2020  
au SIVAL à Angers,  
France



**VEGEPOLYS  
VALLEY**

CULTIVONS L'AUDACE VÉGÉTALE



ANGERS - 14, 15, 16 JANVIER 2020



# L'AGTech at the SIVAL



# SIVAL connection & innovation

Connected objects, robotics, artificial intelligence, big data, drones and programs... are all tools that can be a real accelerator for positive changes, and opening a wide range of possibilities for farmers. Heading this new wave are start-ups and businesses that are creating new opportunities and offering a new vision of agricultural practices. All these innovations coincide with the will to answer strong societal expectations concerning the environment, food safety / traceability, the demographic explosion, sustainable consumption and respecting mankind. The economic performance of farms is a key notion of this trend, as it gives farmers, the possibility of new choices linked to the evolution of markets.

Farmers adapt to, and adopt these advances. According to the agriculture - innovation 2025 report by the Ministry of Agriculture, 79% of farmers use the Internet and 70% of those install professional applications on their smartphones. This trend has exploded over the last few years, notably, with the use of professional applications increasing by 110% between 2013 and 2015.

By invitation only

# The AGTech evening Tuesday 14 January

New technology serving the  
agriculture of the future

#VerticalFarming #AgriTech #OAD  
#AgricultureConnectée #Robotique #IoT  
#Numérique #BioTech

## ● 19h : Speeches by Experts

### > Co-développement of AGTech solutions

- Tânia FERREIRA, Chargée de projet e-GLEEK, Advanseer
- Adeline CHASTRUSSE, Animatrice Écophyto et SBT-BSV interfilières, Chambre d'Agriculture des Pays de la Loire
- Emeline Défossez, Chargée de mission Nouvelles Technologies, Vegepolys Valley

### > Vertical Farming

- Professeur Leo MARCELIS, Directeur du Service « Horticulture & Product Physiology », Wageningen University & Research

### > Agricultural Robotics

- Gaëtan SEVERAC, Président de GOFAR (FIRA)
- Stéphane DURAN, Responsable du Projet RobAgri

## ● 20h : Concours SIVAL Innovation Prize award ceremony

Recognising the best equipment, product and service innovations throughout the plant production sector.

- 20h30 : Networking cocktail  
Démonstrations & Event

For the press  
Compulsory registration with Anaelle MARIE  
anaelle.marie@agencefls.fr

The AGTech, which links new technology and agriculture, will be well represented in the SIVAL's alleys. Whether it is on the exhibitors stands, or during the different events that have been organised, digital and connected agriculture, data, robotics, and artificial intelligence will all be major themes at the SIVAL.



## The Concours

### SIVAL Innovation

It rewards the innovations in the plant production sector in seven categories :

- **Varietal innovation** (seeds and plants)
- **Machinery and automation**
- **Inputs, crop protection, fertilisation and substrates**
- **Production solutions** (support, supplies, small tools and equipment...)
- **Packing, marketing** (wrapping, labelling, packing...)
- **Services and programs** (training, technical support, decision-making programmes, other services...)
- **Collective approach** (an approach that has mobilised several private members and/or public acting in a sector's interest: information, promotion, certification, mutualisation...).

**Tendances 2020** : Varietal innovation is well and truly present, with products that meet consumer expectations (produce that has flavour, and that stands out because of its originality), whilst also answering production challenges (varieties that are more resistant, easier to produce...). Connected tools, programmes and machinery create more and more precision on farms, thus contributing to the sustainability of production systems.

The prize award ceremony will take place  
during the SIVAL Evening reception  
whose theme will be the AGTECH  
Tuesday 14th of January at the  
Centre de Congrès in Angers

Crédit Mutuel



# AGREEN STARTUP

[www.agreen-startup.com](http://www.agreen-startup.com)

## The Concours AGreen Sartup

The Concours AGreen Startup has become one of the highlights of the SIVAL. A concept that links agriculture and innovation, it provides entrepreneurs, professionals or students with the possibility to develop an innovative project. It is a real innovative marathon that not only pushes the participants to excel themselves, but it also encourages sharing and discovery.

### TO ENCOURAGE CREATIVITY

### TO INNOVATE TOGETHER USING COLLECTIVE INTELLIGENCE TO INVENT THE AGRICULTURE OF TOMORROW !

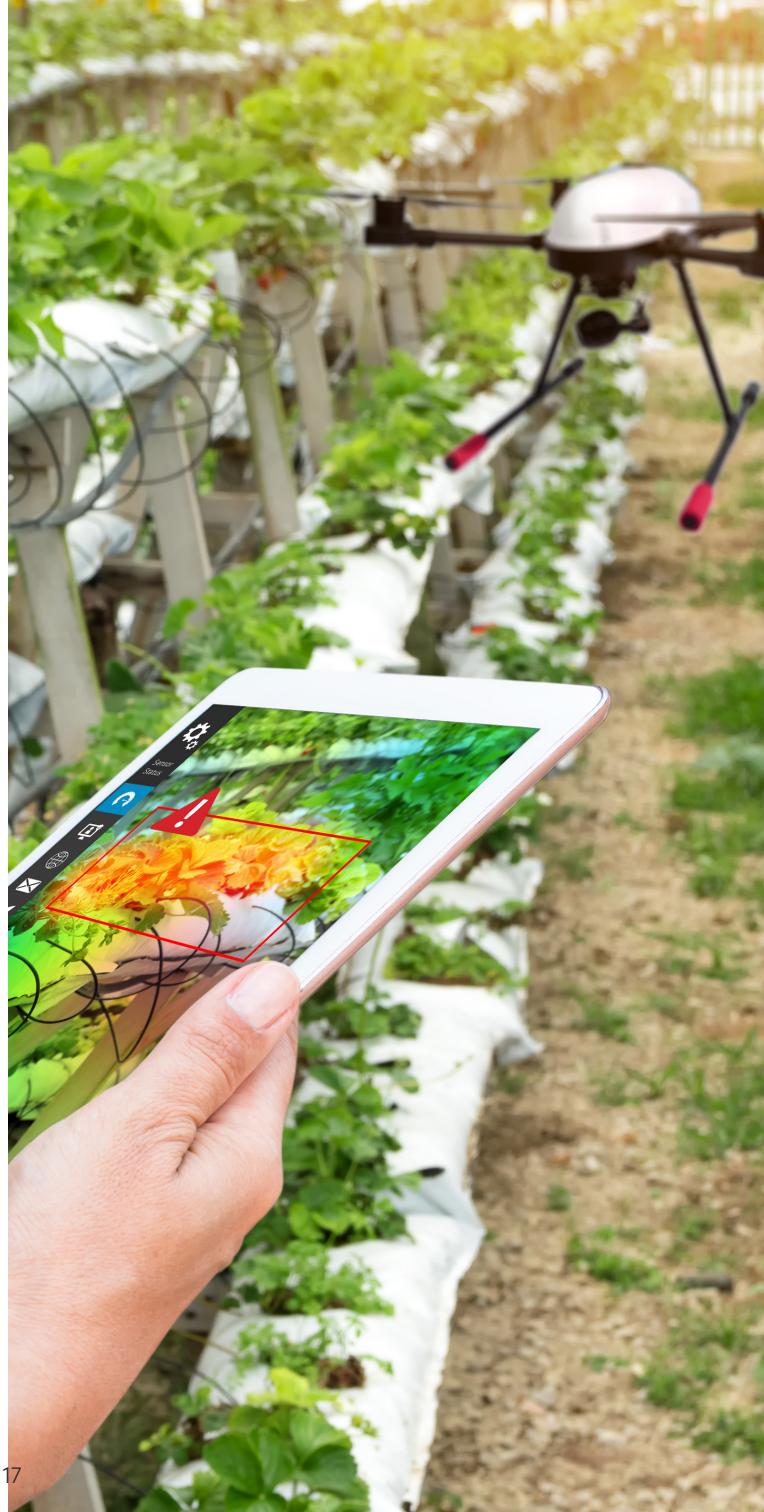
**Tuesday 14 January :** The project holders will be pitching for 90 seconds, in order to present their idea and convince their future teammates. The teammates will choose their project and they are off!

**Tuesday 14 on Wednesday 15 January :** At the heart of the SIVAL, the teams will be boiling. A coach and some experts will be accompanying them in order to help a business plan emerge from their project! The intermediate pitches it will enable them to get warmed up!

**Thursday 16 January :** They are on the home straight: the jury made up of professionals will be waiting for the final pitches and then deliberate. A roll of drums....and the prize awards!

## Prize awards

**The Concours winners will be announced on Thursday, 16 January at 12h at the SIVAL Forum.**



# THE PRIZEWINNERS OF THE CONCOURS SIVAL INNOVATION 2019

## VARIETAL INNOVATION - 3 Awards

### ●Poire CH201 COV - DALIVAL

**GOLD**

A pear variety with much appreciated gustatory qualities, and also very good conservation. Bacterial fire tolerant, easy to grow, regular, without alternation, high yielding, it is a very good variety that could contribute to the revitalisation and the re-localisation of pear orchards.

### ●Potimarron Kaori Kuri F1 - ENZA ZADEN

**SILVER**

This new variety provides the answers to problems linked to the conservation of squash, whilst also offering good virus resistance and a very good taste. It avoids post-harvest losses, and prolongs the marketing period.

### ●Chou Fioretto® - GRAINES VOLTZ

**BRONZE**

The result of a cross between cauliflower and broccoli, Fioretto® has the appearance of an elegant stalked cauliflower, with a delicate taste. There is no need to peel it, no waste. A novelty that could attract the attention and the taste of new consumers.

## INPUTS, CROP PROTECTION, FERTILISATION - 4 Awards

### ●Julietta® - AGRAUXINE by LESAFFRE

**SILVER**

1<sup>st</sup> biofungicide using live yeasts *Saccharomyces Cerevisiae* for treating botrytis and brown rot. A biocontrol innovation whose case was supported by numerous field trials. It can be used in conventional, organic or et zero residue farming.

### ●Herbi'Chanvre Semis Direct - GEOCHANVRE

**BRONZE**

This selective mulching membrane is made using 100% French hemp in order to carry out mulch planting when using suitable methods, and to avoid the need for weeding in carrots and other direct drilled vegetables.

### ●Predafix - BIOLINE AGROSCIENCES

**BRONZE**

Complementary second-generation food product designed to aid the establishment of predatory mites in glass house crops. Applied as an aqueous solution with no allergens, there is no delay for re-entry.

### ●Whisper® - DE SANGOSSE

**BRONZE**

1<sup>st</sup> sulphur with an agricultural origin, Whisper® is a product with a circular economy. It is produced using biogas from agricultural waste. It treats powdery mildew in vines successfully, it can be used in organic agriculture.

## MACHINERY AND AUTOMATION - 8 Awards

### ●NoNa+ - RIDDER

**GOLD**

1<sup>st</sup> water treatment station in the world that is able to eliminate sodium. This major innovation enables recycled irrigation water to be used, by reducing the yield losses due to an accumulation of sodium, as well as reducing the cost of water and fertiliser. It minimises rejected water and guarantees recycling on a sustainable basis.

### ●Maestro - BUCHER VASLIN

**SILVER**

Using the Maestro option enables the Bucher XPert press to be completely automated throughout the four phases of the press's cycle : filling, pressurisation, emptying, washing. Improved performance and safety.

### ●Robot agricole hybride TREKTOR - SITIA

**SILVER**

1<sup>st</sup> hybrid agricultural robot in terms of motorisation, Trektor can be used in multiple crops with multiple implements : It can increase its width or height in order to adapt to crops or existing implements that it can be made to carry. Its design makes it polyvalent, precise and safe.

### ●Trooper - INSTAR Robotics

**SILVER**

Aimed at nurseries and market gardeners, Trooper is an autonomous mobile robot that handles potted plants for spacing or retightening. It reduces the tediousness of the work and compensates for a lack of labour.

### ●Désherbeuse à disques ORBIS - ROLL N SEM

**BRONZE**

The ORBIS disced weeder can destroy broadleaved weeds, without working the soil due to its inclined discs that lacerate the plants. It can be adapted for all types of plantation, working over the full width or in rows.

### ● **ESCAMOB 300 - KI.CONCEPT**

**BRONZE**

Designed specifically to cope with the problems linked to cider orchards, this elevated working platform enables one or two operators to work at height both safely and comfortably, with a reduced level of investment.

### ● **Potjet - ETS JOLLY**

**BRONZE**

The Mayer PotJet distributor is an electric unstacker for pots which resolves the traditional problems of blocking and adjustments, thanks to its system using four augers. It can work with round or square pots from 8 to 40 cm, or pots made from peat. Adjustment changes are quick and easy.

### ● **Robot porte outil « E-Tract » - ELATEC**

**BRONZE**

The E-tract is a multipurpose robotised electric tool carrying tractor. It is designed for easy maintenance and it enables the farmer to use implements that are already on the farm. It can also be equipped with intelligent implements for hoeing in order to work in the tractors slave mode.

## **SERVICES AND PROGRAMS - 2 Awards**

### ● **Vegetal Grow Development - VEGETAL GROW DÉVELOPPEMENT**

**BRONZE**

Plant lighting platform, this ready to use solution reduces energy consumption thanks to LEDs and real-time control provided by artificial intelligence, in order to improve plant growth, depending on crop type and growth phase, with improved yields per m2 and crop spacing.

### ● **Natutec Scout - KOPPERT FRANCE**

**BRONZE**

An intuitive mobile application that associates a control panel that gives an instantaneous vision of the crop health status. It includes an image recognition tool which enables insect pests to be identified and populations to be counted using Machine Learning technology.

## **PRODUCTION SOLUTIONS - 1 Award**

### ● **Unit for the controlled oxidisation of musts - MICHAEL PAETZOLD**

**BRONZE**

An original idea to eliminate unwanted compounds in order to get good wine ageing in bottles, thanks to a system of oxidisation of white and pink musts in the pre-fermentation stage.

## **PACKING AND MARKETING - 1 Award**

### ● **MBC - ECO MARK NATURAL BRANDING**

**BRONZE**

This system for laser printing, without using additives, on the skins of fruit and vegetables is an alternative to using sticky labels and marketing wrapping. In a few milliseconds the 3-D camera enables the position of the product to be detected in order for the marking to be correctly placed.

## **COLLECTIVE APPROACH - 2 Awards**

### ● **VitiPep's - VITIPEP'S**

**GOLD**

The creation of this collective label by professionals in the wine nursery sector is a solution at a national level, it is a real initiative that will enable French production to have added value and to guarantee the French origin and the excellent health status of vines.

### ● **MOOC « Plant seeds, what are the challenges of the future ? » - GNIS**

**BRONZE**

Designed and produced by the AGROCAMPUS QUEST school and the Interprofession des semences et plants, the GNIS, with the support of the Agreenium, it is the first online training course aimed exclusively at plant seeds. Accessible and free for everyone, it is diffused by the reference platform FUN MOOC.



A dedicated area to enable recruiters and candidates to meet each other.

The ANEFA and the APECITA will have several highlights at the **SIVAL's Espace Emploi**, both individual and collective in order to help the (future) employers and employees.

### • The Horti Dating

Tuesday 14th of January from 14h to 16h

> The Arfho (Association régionale de la filière horticole ornementale), the BHR (bureau horticole régional), the Chambre d'agriculture Pays de la Loire, in partnership with the APECITA, are offering the opportunity to people who would like to start an ornamental horticultural business to come and meet companies with a range of profiles (horticulture, nurseries, family businesses, or companies with several dozen employees,...) that are looking for successors or partners in the short and medium term.

### • The APECITA job dating

Wednesday 15th and Thursday 16th January

> Will enable candidates to make initial contact with a recruiter or a business looking to recruit by having a quick discussion. Each year more than 60 positions are available with around 30 employers present.

### • The individual employment rendezvous

> Aimed at young graduates, people seeking employment or workers, our work/training advisers will give you time for individual discussions throughout the three days of the show.

# EMPLOYMENT

## in agriculture in the Pays de la Loire

A major employment creator, with promising prospects for career development. Agricultural employment makes up **5% of the region's employment** (2.8% at national level).

Agricultural workers make up **17.5 %<sup>1</sup>** of the total full-time work force, in other words, 5 points more than in 2010 and providing more than 20% of the work volume of the entire permanent farm labour force.

The Pays de la Loire is one of the leading regions in terms of salaried agricultural labour, with more than **90,000 workers<sup>2</sup>**. Half of the salaried workers and the ETP (equivalent full-time) are in the specialist plant production sector.



**36 100**  
farmers and  
partners



**24 100**  
farms



In the Pays de la Loire, it is estimated that there is an annual need for **230 salaried workers**, in wine production, for positions as polyvalent workers in both the vineyards and the wine cellars.

300 salaried workers in market gardening and 130 salaried workers in tree production for positions requiring workers with qualifications



<sup>1</sup>Ministry of food, of agriculture and fishing – Structure survey 2015

<sup>2</sup>Source : CRPE-ANEFA Pays de la Loire : Observatory for Salaried Employment in Agricultural Production

# And also within the **SIVAL'S Employment Area** are the Anefa and APECITA **Roundtables and conferences**

## À PROPOS DE...



ANEFA Pays de la Loire (Association Régionale pour l'Emploi et la Formation en Agriculture) is a structure that was created in 1992 belonging to the ANEFA Network.

Comanaged by the employers and the workers unions it implements the decisions made by the Commission Paritaire régionale pour l'Emploi (CPRE) in agriculture.

All the employment opportunities are available on the ANEFA site : [www.lagriculture-recrute.org](http://www.lagriculture-recrute.org)



Created in 1954, and officialised by pôle emploi in 1970 and recognised as having a public use in 1971, APECITA due to the desire of its social partners became a combined Association in 1981 serving the whole agricultural industry, including agribusiness and the environment. All the employment opportunities are available on the APECITA site : [www.apecita.com](http://www.apecita.com)

## Roundtables

### ● **Urban agriculture: new professions?**

**new skills?** > Wednesday 15 January at 11h

The forms of emerging and re-emerging agricultural practices being used in towns, urban agriculture comes with different systems of production and commercialisation... Will this form of agriculture, which answers societal demands, have any effect on skills and professions, both currently and in the future?

### ● **What defines a good employer in 2020 ?**

> Wednesday 15 January at 15h

The employment market in agriculture is rising, but businesses struggle to recruit, especially when unemployment is still high. What is it that encourages candidates to reply to one employment offer but not another? What do employees expect of their employer? How can one attract talents into one's business? Take part in this workshop in order to answer these questions and help make businesses more attractive to candidates.

### ● **Digital agriculture: new professions? New skills ?**

> Thursday, 16 January at 11h

Running farms, connected objects, robotisation, new on-board technology, interactive training... all of these new practices are developing within our production and service companies. These new techniques have an impact on the way we carry out our professions, but do they really fundamentally modify our professions and the skills required to perform them ?

## Conferences

### ● **OCAPIAT, your new skills operator**

> Tuesday 14 January at 11h30

Created as a result of collaboration between FAFSEA and OPCALIM, what are the objectives and the services offered by the new OPCO for the different agricultural cooperative sectors, for agriculture, fishing, the food industry and regions.

### ● **APECITA Regional commission**

> Thursday, 16 January at 14h

« Stereotypes and subconscious bias: not guilty... but responsible! ». The figures are telling and do not make good reading; human resources have empathy but are not utopian; salesman talk a lot, but do not listen ; the secretaries are well organised, but chatter too much. What are the stereotypes that are shared, but that harm good relations ? Where do these stereotypes come from ? How do they work ? Why are they so widespread and resistant? What role do they fill ?



# THE SIVAL IS ALSO...

## **A rethought centre for innovation**

The SIVAL offers a centre aimed at innovation in the different sectors. This area will be welcoming Vegepolys Valley (a centre serving innovation in plant production worldwide) and all its partners in research and training. Also present in this area will be a village for young innovative businesses, and collective pavilions for start-ups (Ferme Digitale, Cofarming, Champs du Possible...). This area will also be home to the SIVAL Forum for the first time, with speeches even more focused on the challenges facing agriculture in the future!

## **An area conducive to friendly exchanges**

The SIVAL will be renewing its area for friendly exchanges within the Centre for innovation. This area is intended for the organisation of your business rendezvous, to let you relax and have a coffee break, or just to give you a chance to recharge your electronic equipment using the sockets provided.

## **An application**

This application enables visitors to prepare their visit to the SIVAL by choosing the conferences that they shouldn't miss, and also the exhibitors that they need to meet. The application offers an interactive plan which will enable visitors to find their way round the show more easily, there is also a function for noting appointments, conferences and other discussions. After the show it will enable the user to receive a report covering his or her visit.

## **The Twapéro**

In order to stay connected and convivial the SIVAL will be organising the Twapéro, on Wednesday, 15 January at 12h at the Espace Innovation.

# **FORUM CONFERENCES SIVAL**



The Forum's conferences and speeches are always eagerly awaited at the SIVAL as they encourage discussion and the discovery of new trends

## 9h30 - 11h30 - Apple-cider meeting - IFPC

Salons Loire

### Optimisations and technical innovations for the sustainability of the apple-cider orchard

Given the willingness of the professionals to use sustainable practices, the substantial development of the AB (organic farming) apple-cider orchard and the regulatory evolutions, the industry had to optimize its practices and integrate alternative strategies. Mechanical operations are an interesting answer to reduce the number of inputs even if they impact the working structure and the production and investment costs. The recent evolutions in the apple orchard concern row maintenance, spraying and thinning. This lecture will give an update on recent developments and ongoing research in these sectors.

- **9h30 - 9h40 : Opening of the meeting**

- Denis ROULAND, President of the French Institute for Apple-Cider production

- **9h40 - 10h30 : Optimising spraying in arboriculture: results of the R&D «Pulvarbo» project**

- Florence VERPONT, Ctifl et Jean LE MAGUET, IFPC

- **10h30 - 11h00 : Evolutions in apple thinning alternative strategies and perspectives**

- Nathalie CORROYER et Jean-Charles CARDON, Regional Chamber of Agriculture - Normandy

- **11h00 - 11h30 : A Comparison of row maintenance mechanical tools for apple orchards**

- Anne DUVAL-CHABOUSSOU, Ctifl/Station La Morinière et Jean LE MAGUET, IFPC

- **11h30 - End of the Meeting and cocktail (Cider)**

## 10h - 12h - Vegetables

Salle Maine

### Biological control for covered market gardening and horticulture

The use of biological methods to control pests and diseases is more and more crucial in covered horticulture and market gardening. Whether it is for organic or integrated crops, many successes do show that it is possible to prevent the development of pests by increasing the number of predatory auxiliaries or by using natural control products or specific cropping techniques. Nevertheless, some pests or diseases remain difficult to manage if we only use biological control methods. Various concrete examples from recent research in ornamental and vegetable crops will be introduced during the presentation. The international symposium of the IOBC (International Organisation for Biological and Integrated Control), organized in Brest, will be dedicated to biological control international research. One day will be opened to professionals.

The IOBC-WPRS working groups dedicated to biological and integrated control for covered horticulture and market gardening in temperate and Mediterranean areas regroup the main European and international experts (research, industry, professionals) of biological and integrated control methods. Their objective is to find applicable solutions for covered crops. These working groups will meet in Brest, from 31st August to 3rd September during an international symposium devoted to the latest research results and new industrial breakthroughs in biological control products.

- Bruno GOBIN, Ornamental plant research - PCS

- **Simultaneous interpretation**

## 10h - 12h30 - Vegetables

Salle Aubance

### Updates on *Drosophila suzukii* and leaf miner *Napomyza gymnostoma* in Pays de la Loire

For some years now, two so-called “emerging” pests have been causing substantial economic losses to fruit and vegetables growers in Pays-de-la-Loire. *Drosophila suzukii* on strawberries and leaf miners, out of which *Phytomyza gymnostoma*, on leeks. The objective of the 3-year REPROLEG project, developed by ARELPAL, was to know increase knowledge about these two pests, to mitigate their damage, to avoid yield losses and to ensure a high enough revenue so as to allow continuation of business. This lecture will look at the project actions and results obtained.

## 10h - 11h - Alls sectors

Salle Lys

### **Assessment of water bodies and collective challenges for water management**

The state of the water bodies in Pays-de-la-Loire is worrying: only 11% of these water bodies are in a good state. The causes are varied: bigger and bigger withdrawals, diffused pollutions, de-structuration of the river system, etc. Climate change will increase these concerns in the future and the summer 2019 drought may just be a foretaste. Collective involvement is more than ever necessary. The governmental agencies and their partners, and notably the agricultural sector, are getting together to improve the quality of our water bodies.

- Julien DUGUE et Philippe MARCHAND, DDT 49

## 14h - 16h - Fruits - Wine Growing

Salons Loire

### **Eco-grazing, biodiversity: when animals are back into specialised plant crops**

Favouring biodiversity with a comprehensive approach, or more specifically with a balanced co-existence between animals and plants, is key to the resilience of agricultural systems. Today, many practices are developed allowing producers to extend their « tool box » in order to limit interventions and use of inputs.

This lecture will introduce the summary of 25 agro-ecological assessments from the “Favouring biodiversity in vineyards” programme as well as the BrebisLink research project on how to increase the value of “additional” surfaces for sheep grazing.

- Florent BANCTEL et Julie GRIGNON, Chambre d’Agriculture Pays de Loire ;
- Camille DUCOURTIEUX, Chambre d’Agriculture de Dordogne ;
- Nathalie DALLEMAGNE, CAB
- Benoît MARCHADOUR, LPO Pays de Loire
- Edouard MASSART et Jérémy MENARD, le Jardin d’Edouard

● Simultaneous interpretation

## 14h - 16h - VEGE POLYS VALLEY & GIS FRUITS - SYMPOSIUM

Salle Maine

### **Fruit productions and climate change: forward looking and acting for tomorrow**

● Simultaneous interpretation

Fruit crops’ vulnerability to climate change is a major cause for concern for the industry and a challenge for professionals, technical and scientific institutions. While climate forecasts remain uncertain, various impacts and changes in behaviour have already been observed in crops, especially in terms of phenology, fruit quality and outbreaks of diseases.

#### **1. Overview of domestic and international projects in response to climate change, featuring case studies on apricots, grapes and Corsican clementines**

Main impacts of climate change on fruit trees

- Inaki GARCIA DE CORTAZAR ATAURI - INRA Avignon, Plateforme Agroclim

>>>

Apricot adaptation strategies regarding climate change in hot production zones

- David RUIZ GONZÁLEZ - CEBAS -CSIC Murcia

Taking climate change into account in the vineyard: feedback from the Laccave project.

- David RUIZ GONZÁLEZ, CEBAS -CSIC Murcia

Corsican clementines : A current victim of the consequences of climate change and strategies introduced.

- Olivier PAILLY, INRA Corse

## **2. Professionals and scientists recount their experiences and findings, and share strategies they envisage**

- Jacques MALAGIÉ, Vergers d'Anjou

- Raphaël MARTINEZ, Fédération fruits et légumes d'Occitanie

- François CHEVALIER, Gradilis Recherche

- Françoise Besse, COOPLIM

### **14h - 16h - Vegetables**

Salle Layon

#### **Optimising irrigation practices for vegetable crops : feedback on 3 years of test**

During this 3-year project, developed by ARELPAL, tests have been conducted about irrigation practices for vegetable crops in Pays-de-la-Loire. The objective was to reach three main objectives: to determine the needs in water of the main vegetable crops and to offer adapted irrigation strategies, to assess the most efficient irrigation systems (such as drip irrigation) for some crops and finally to test and compare different decision-making support tools (such as the connected probes).

- Maëlle DEPRIESTER et Jérémy BELLANGER, conseillers maraîchage Chambre d'Agriculture Pays de la Loire

### **14h - 16h - Wine Growing**

Salle Aubance

#### **Key items to look at when selling a wine estate**

Key items to look at when selling a wine estate.

- Candice de GRAMONT, Benoît PRUNIERAS et Grégoire FAULIN, SAFER Pays de la Loire

### **14h - 15h - Fruits and vegetables**

Salle Ardésia

#### **Biological control of aphids for covered strawberry crops. What improvements ?**

Many covered crops meet serious problems regarding the regulations of aphids. By feeding on sap produced in the vessels of the phloem, aphids do weaken the plants. Furthermore, the massive production of honeydew can lead to the development of sooty mold, a cryptogamic disease. It impacts photosynthesis and spoils the fruits which may lead to a lesser product quality. Biological control of aphids is generally based on a coupled introduction of predators (green lacewings, syrphid flies, cecidomyiidae) and of parasitoids (parasite insects whose development induces the death of the host aphid). Yet there are sometimes obstacles to biological control because of parasitoid biological control efficiency factors, notably for strawberry crops.

So as to optimize aphid biological control, it is crucial to know the pest and auxiliary communities present in the affected crop system. The first study to be presented is the analysis of space and time variability of aphid and parasitoid communities for strawberry crops. For two consecutive years samples of aphids and their parasitoids were taken in various production environments at the national level. This study determined the key species involved in aphid regulation.

During inundating releasing, factors linked to the biology or ecology of the species may limit the efficiency of these auxiliaries. Aphids are known for hosting symbiotic bacteria that can play a role in parasitism resistance. The second study aimed at determining if symbiotic bacteria associated to aphids may limit the efficiency of parasitoids for covered strawberry crops. We first assessed the prevalence of symbiotic bacteria in strawberry aphids nationally. Then we measured the level of protection granted by these symbiotic bacteria thanks to parasitism laboratory tests. Our study thus evidenced that symbiotic bacteria can partly explain the observed inefficiency of parasitoids.

- Caroline GRANADO, AOP FRAISES
- Estelle POSTIC et Anne LE RALEC, AGROCAMPUS

### 14h - 15h - All sectors

Salle Hyrome

#### **Health at work: can a follow-up be adapted to each employee?**

Workers who are members of the Mutuelle Sociale Agricole (MSA) (Mutual Insurance Company for Agriculture) are entitled to an individual monitoring of their health. It is adapted to the needs of the person and work station hazards. Workers' health is a source of legal obligations for employers. The last health reform in France dates back to 29th August 2017. The monitoring is made by a multidisciplinary team of health at work experts, notably occupational physicians and health at work nurses.

- MSA

### 16h30 - 18h - All sectors

Salle Aubance

#### **Can a plant variety be heterogeneous? Technical, regulatory and societal challenges**

Regulation concerning registration to the variety catalogue is based on one DHS (Distinction, Homogeneity, Stability) principle. It allows the drafting of the ID of varieties and guarantees fairness in trade.

Do today's expectations related to climate change, a varied food, the development of agro-ecology and more diversity question the basis of the regulation? GEVES is asking the question and invites you to take part in the debate.

- Georges SICARD, ex Directeur du Secteur d'Etude des Variétés du GEVES
- Pascal COQUIN, Directeur de l'unité GEVES de Brion

### 16h30 - 18h - Alls sectors

Salle Layon

#### **LED and plasma lighting, climate, light, tracking and connected management systems for crops**

The new technologies for greenhouses and growing chambers (phytotrons) to meet the new environmental challenges for plants. What strategy to choose greenhouse equipment, growing chambers and phytotrons to meet the chosen objectives?

How to use new technologies to meet the challenges and respect schedules (monitoring expert system, data sharing, decision-making support tools, relocated plant test)? How to test new varieties adapted to each country and local constraints?

- Christian RABIN, Dalkia Froid Solutions

## 17h - 18h - FRUIT 2050 Conference

Salle Maine

### **Press Club : the impact of climate change on specialised crops.**

For the first time, the SIVAL is organising an International Press Club with the aim of sharing information on a given theme. For this 1<sup>st</sup> edition of the Club, a dedicated conference has been organised as part of Fruit 2050 to focus on certain methods and strategies, implemented in a set of countries and with a direct climate change connection. Articles written prior to the SIVAL by international Club journalists will serve to underpin the thrust of this conference.

There will be a focus on the following countries: Switzerland, Morocco, Finland, Chile, Italy and Germany.

- *Simultaneous interpretation*

## 9h30 - 11h30 - CTIFL - FRUIT PRODUCTION FORUM

Salons Loire

### Will climate change modify our practices in arboriculture?

- *Simultaneous interpretation*

The scientific community worldwide has now recognised the reality of climate change. By 2050, we will be faced with higher temperatures, fluctuating rainfall and more frequent and extreme weather events. What will be the impact of such weather patterns on the French tree growing industry? Is now the time to adapt our production systems? Several areas of reflection will be explored.

- **10h - Introduction to the forum**

**Presentation of the study “Agri-food sectors and adaptation to climate change” with a special focus on work conducted in the Loire region apple sector.**

- 10h20 - Discussion/Questions

- **10h25 - Effets des changements climatiques sur les bio agresseurs du verger, Jérôme Jullien, Ministère de l’agriculture, Direction générale de l’alimentation, Sous-direction de la qualité, de la santé et de la protection des végétaux.**

- 10h45 - Discussion/Questions

- **10h50 - Will access to irrigation be restricted ? Envisaging collective water management**

- M. Mourad Hannachi de l’INRA AgroParisTech.

- 11h10 - Discussion/Questions

- **11h15 - Apples and weather-dependent consumption.**

- Dragana Miladinovic, INTERFEL

- 11h35 - Discussion/Questions

- **11h40 - Can we improve and leverage the carbon footprint in orchards ?**

- Josselin SAINT RAYMOND, French Apple and Pear Association

- 12h00 - Conclusion

## 9h45-13h - Colloque Euroviti

Salle Maine

### Vineyard decline: Wood diseases : public and private research scientific discoveries

- *Simultaneous interpretation*

During the 2020 Euroviti symposium, stakeholders in public and private recherche will present the results of the Advantage project and breakthroughs in other projects of the National Scheme, focusing on three topics: symptoms detection by imaging, impact of decline on yield and control strategies. As usual, discussions between the panelists and the audience -operators of the sector and technicians, will enrich the debates so as to develop this vineyard decline control together.

Moderator : Christophe Riou, IFV-CNIV.

#### PROGRAMME

- **09h45 : Welcome**

- Olivier BRAULT, Président du Pôle Val de Loire-Centre - French Institute for Vineyards and Wines

- **10h00 : Organising research to face vineyard decline**

« French National Scheme to control vineyard decline », Christophe RIOU, IFV-CNIV

« Advantage : A public/private collaborative project on wood diseases », Patricia LETOUSEY, Agrauxine by Lesaffre

- **10h20 : Detection of wood disease symptoms and monitoring of pathogens by imaging**

« Detection of wood disease symptoms by proxy and telediction », Christian GERMAIN, Bordeaux Science-Agro

« New imaging techniques to study and monitor wood diseases in vineyards », Cédric MOISY, IFC

- **11h10 : Modelling the impact of decline on yields**

« Assessment of plot yield with a mechanistic model : toward a better quantification of wood disease impact », Marion CARRIER, CybeleTech

«Diagnosis and ranking method for the causes of low yields in plots », Marion CLAVERIE, IFC

- **11h50 : Strategies to control vineyard decline**

«Selecting solutions to control wood diseases – product impacts first results », Florence Fontaine, University of Reims Champagne-Ardenne

«Mobilisation and innovation in the wine growing community – networks of wine growers to test and transfer innovative practices to control vineyard decline », Thomas Chassaing, Association Technique Viticole du Maine-et-Loire

## 9h30 - 12h - CTIFL Vegetables - TECHNICAL MEETING

Salle Layon

### The use of plant genetics in an agro-ecological system for vegetable crops

The use of diversity in vegetable growing is a major asset for the producers. Indeed, genetic resistances prevent or limit the development of diseases or pests for a plant or more generally a plot. This allows substantial savings of phytopharmaceutical products. As for crop rotation, prophylactic measures, grafting or biological control, genetic resistances play a key role in the Integrated Protection of Vegetable Crops. Beyond genetic resistances, the use of different varieties can also lead to a gain in efficiency for water and nutrient assimilation.

#### PROGRAMME

- 9h30 - Welcome of participants

- **10:00 - Introduction**

- Gérard ROCHE, Légumes de France

- **10h05 - Presentation of the GIS PIC LEG Génétique et Innovation (Genetics and Innovation) working group**

- Justine GARNODIER, CTIFL

- **10h20 - Plant improvement, a major challenge for the vegetable sector**

- Emmanuel LESPRIT, UFS

- **10h40 - The important use of genetics in the works of the Dephy Ferme network**

- Maxime CHABALIER, CA Pays-de-la-Loire

- **11h00 - Brassidel – identifying the resistance of cabbage maggots, *Delia radicum*, for brassica vegetable varieties**

- Maxime HERVÉ, Université Rennes 1 / Sébastien Picault, CTIFL

- **11h20 – How to use genetic resources to increase the efficiency of the P and K for tomato and lettuce crops**

- Aurélie Rousselin, APREL / François Lecompte, INRA

- 11h40 - Questions

- **12h00 - Conclusion**

- Marc Delporte, CTIFL

## 14h - 16h - Fruits / Organic productions

Salons Loire

### The organic apple market is developing: how can we meet the demand ?

● Simultaneous interpretation

In 2018, Brittany, Centre Val de Loire and Pays-de-la-Loire represented 4,000 hectares of organic fruit crops (8,5% of French tree growing surfaces). More than 2/3 of the West of France orchard are dedicated to apple growing (cider/juice/table) and the surfaces are substantially increasing (+29% vs 2017). This dynamic offer matches a similar dynamic demand as many users want to upgrade the production on the market of fresh and processed (juice, vinegar, compote) products. If you want to set up as an organic tree grower or diversify by planting an orchard, come and meet the professionals of the sector. They will tell you of their needs and answer your questions! Conférence co-organisée par Interbio des Pays de la Loire, Initiative Bio Bretagne et Biocentre.

- Sylvie FOREL, Les Vergers de l'Île
- Jérôme LEPAPE, GAB 29
- Eric LE CHAT, Nature de Pomme
- Michel DELHOMMEAU, Coteaux Nantais
- Eva LACARCE, Agence Bio
- Krisell MICHEL, Terre-Azur
- Jean-Luc THIBAUT, la Ronde des Fruits
- Hervé FOURNIER, Terra 21

## 14h - 16h - Perfume, medicinal and aromatic plants

Salle Maine

### The use of plant extracts and essential oils for plant production.

● Simultaneous interpretation

- Denis BELLENOT, ITEIPMAI

## 14h - 15h30 - Wine Growing

Salle Layon

### The Loire Valley wines in the USA

● Simultaneous interpretation

In 2018 Brittany, Centre Val de Loire and Pays-de-la-Loire represented 4,000 hectares of organic fruit crops (8,5% of French tree growing surface). More than 2/3 of the West of France orchard are dedicated to apple growing (cider/juice/table) and the surfaces are substantially increasing (+29% vs 2017). This dynamic offer matches a similar dynamic demand as many users want to upgrade the production on the market of fresh and processed (juice, vinegar, compote) products. If you want to set up as an organic tree grower or diversify by planting an orchard, come and meet the professionals of the sector. They will tell you of their needs and answer your questions!

As the first global market for wine consumption, the USA is considered as a mature market with yet substantial growth perspectives thanks to a growing and dynamic national consumption. The marketing of imported wines follows a specific pattern: the 3-tier system. First export market for the Val de Loire wines, exports are up: +16% in value and +9% in volume in 3 years. Given this market organisation, a panel discussion will focus on a return of experience from Loire Valley operators working in the USA, on support to companies operating on this market and on promotional collective actions for the Val de Loire wines in the USA.

**14h30 - 15h30 - Alls sectors**

Salle Authion

**The Bulletin Santé du Végétal - BSV (Plant health bulletin) : a free of charge tool to monitor your crop's health**

The Bulletin Santé du Végétal (BSV – Plant Health Bulletin) exists in all the French regions and for all plant sectors. It gives a relevant risk analysis but submits no recommendation regarding phytosanitary products. You thus have all the relevant information to make a strategic decision in an autonomous and independent way, with a view to reducing the use of phytosanitary products.

The BSV is supported by a network of observers who monitor one or several plots and traps. Come and (re) discover the BSV as well as the observer job by discussing with the BSV people.

- Stéphane LAMARCHE, Polleniz
- Nadège BROCHARD-MEMAIN et Cécile SALPIN, Chambre d'Agriculture des Pays de la Loire

**14h30 - 15h30 - International Horticultural Congress**

Salle Ardesia

**Day-989 - 31st International Horticultural Congress in Angers - August 14-22, 2022 : All mobilized !**

IHC2022 Organizing Committee : Destination Angers, Vegepolys Valley, Inra, Agrocampus-Ouest, Université d'Angers, Cirad

**14h - 16h - Vegetables, Wine growing, Perfume, medicinal and aromatic plants**

Salle Aubance

**Agronomy as an alternative to phytosanitary products. A focus on soil cover**

Within the framework of a multi-sector project (market gardening, wine growing, aromatic and medicinal plants, large crops), surveys with regional experts led to a panorama of alternate solutions to the use of phytosanitary products, their efficiency and their degree of use in the different sectors. Soil coverage is one of the cross-sector possibilities used in the different sectors. Results of experiments, return of experience from farmers and advisors will testify to their successes and points of attention. This lecture will be based on results.

- Aline VANDEWALLE et Perrine DUBOIS, Chambre d'Agriculture des Pays de la Loire
- Emeline DEFOSSEZ, Végépolys Valley
- Frédéric JOUIN, Groupement des Agriculteurs Bio de la Sarthe
- Morgane CUSIN, ITEIPMAI

**16h30 - 18h30 - Alls sectors**

Salle Aubance

**The recording of working times: advantages, benefits and consequences**

The recording of working times allows an assessment of the impact of labour on each work station. Measuring working time is essential for the evolution of crop methods, production costs and for the necessary investments to support farm competitiveness and their capacity to meet the environmental requests.

For wine growing, payroll accounts for 25 to 30% of the charges. How can we turn time management into a business management and performance tool?

- Nathalie MEUNIER et Dominique MOTTEAU, CERFRANCE

## 16h30 - 18h - Petits fruits rouges

Salle Maine

### Are blueberries, black current, red current, raspberries and black berries products for the future ?

- Simultaneous interpretation

- Guillaume MARIE, Association Nationale Cassis Groseille, Syndicat des Producteurs de Myrtilles de France, et Association de Valorisation de la filière framboises.

## 17h - Vertical Farming

Salons Loire

### L'Agriculture verticale, aller au-delà de l'engouement des débuts

Vertical farming, looking beyond the start-up hype. In some regards, vertical farming seems to be the «Siliconvallization» of agriculture: newcomers, high investment in new technologies & business models, uncertain profitability. There certainly is some of this start-up hype & venture capital craze but vertical farming is tackling some real issues in agriculture such as water scarcity, pesticides and local food systems. This keynote speech will give an industry & technology overview, address the challenges faced by vertical farmers and look into the next generation of vertical farms.

Food production is responsible for nearly 27% of greenhouse gas emission globally. Thus, it is necessary to delve into the possible roles of indoor farming as means of decreasing the food imprint of our cities on the planet. During this session, we assess the challenges that conventional food production faces in a changing climate and what can be done in order to fix our broken food systems.

By 2050, we will have 2.5 billion more people living in urban areas and they need fresh, safe and nutritious food. Let's come together in SIVAL to show that climate action can be a way of life: a way of innovating, a way of designing, a way of planning, and a way of thriving.

Let's explore our responsibilities together !

- Eric DARGENT, CEO, REFARMERS ; Ramin EBRAHIMNEJAD, Head of Science and Education, Association for Vertical Farming

## 10h - 12h - Organic vegetables

Salons Loire

### **Organic market gardening, how to make work easier ? Examples of ergonomics related innovations**

- Simultaneous interpretation

Working in market gardening is so painful that it is difficult to get a loyal seasonal workforce. Some producers even suffer from physical pains in their early 40S. Mitigating painfulness is thus crucial in order to allow continuation of these businesses. This presentation is an opportunity to introduce the ergonomic approach developed by Toutiterre and ERGOS Ergonomie in order to design the cobot called TOUTILO as well as the Auray experimental station and is different tools aiming at reducing painfulness at work (robots, straddle tractors, seats, trolleys, etc.) The MSA Ain Rhône (Mutual insurance company for agriculture) will also introduce an encompassing support system for the design of new buildings and aiming at improving working conditions.

- Maet LELAN, Station expérimentale de Bretagne Sud
- Amandine BELLONI, ERGOS Ergonomie
- Hélène PROSBT, MSA du Rhône
- Flore LACROUTS-CAZENAVE, TOUTITERRE
- Elisabeth COCAUD, Chambre d'Agriculture Pays de la Loire.

## 10h - 12h - Wine Growing

Salle Maine

### **Climate change: understanding the evolution to act now!**

- Simultaneous interpretation

How to adapt to climate change; the example of wine growing. This presentation will first introduce climate change and its consequences on agriculture, followed by the ongoing research projects for wine growing and concrete actions already implemented for crop management, plant equipment, etc. to adapt the sector to tomorrow's production conditions.

## 11h - 12h - Fruits

Salle Aubance

### **Hazelnuts: a diversification opportunity with KOKI**

- Bruno SAPHY, UNICOQUE

## 14h - 15h - Organic - Alls sectors

Salons Loire

### **The organic market in Europe : an ongoing development !**

- Simultaneous interpretation

Europe is the 2nd organic market. What are the specificities of the European countries for the development of organic production? Is consumption developing with the same distribution channels? These are some of the topics that will be discussed with you.

- Goulven OILLIC et Nadia ZARIOH, INTERBIO Pays de la Loire

## 14h - 15h30 - Alls sectors

Salle Maine

### **Farmers and the global digitisation movement**

- Simultaneous interpretation

Applications, data bases IOTs, etc.: Agriculture is undoubtedly part of the global digitisation movement. Beyond the major technological challenges, this phenomenon is having economic and sociological consequences for farmers, farms, jobs as well as for the agricultural and agri-food sectors. This presentation will shed light on these consequences and focus on specialized crops.

- Karine DANIEL, Économiste et Directrice de Recherches - ESA LARESS / ESA Angers

## 14h - 16h - Alls sectors

Salle Aubance

### **Stereotypes and unconscious biases: not guilty... but responsible!**

Accountants are rigorous but not so funny people, HR managers show empathy but are utopian, sales representatives talk a lot but not listen much, secretaries are organized but too talkative, etc. So many stereotypes that we all share but that are detrimental to a "living well" together!

Any organisation today is facing challenges of an always increasing diversity which is now mature in terms of existence and advocacy. To manage it in an intelligent way and make it a source of well-being and performance, HR processes showing equal treatment for all must be implemented. Yet this is not enough as practices are confronted with preconceived ideas and archaic thoughts, among which stereotypes.

Stereotypes do play a key role in discrimination and self-censorship. They are always present and influence our choices, our judgements and our daily actions.

But where do stereotypes come from? How do they operate ? why are they so widespread ? What role do they play ?

If they cannot be erased in a short period of time, it is possible to raise "firewalls" so as to not use them abusively in all professional situation. The objective is to turn them off, and to not feel guilty of their existence but responsible of their use.

## 9h30 - 17h - DEPHY Specialised Crops Symposium

Terra Botanica

### What are the necessary alternatives and adaptations to ensure the continued use of phytosanitary product saving systems ?

#### PROGRAMME

- **08h45 : Accueil**

- Olivier BRAULT, Président du Pôle Val de Loire-Centre de l'Institut Français de la Vigne et du Vin

- **9h30 : Presentation**

- Virginie BRUN Cheffe de projet DEPHY and Philippe NOYAU, Président de la Chambre Régionale d'Agriculture Centre Val de Loire

#### Séquence 1 : the DEPHY specialised sectors and their results

#### Séquence 2 : Biological control in France

#### Séquence 3 : Human beings as the main obstacle to mitigating the use of phytosanitary products





# FORUM

## ESPACE INNOVATION

This year the **FORUM** will be moving into a glasshouse in the Espace Innovation at the SIVAL

## **9h45 - 10h15 - Introduction to the LabCom MATCH**

### **Alternative methods to the chemical treatment of hydrangeas**

A joint IRHS unit (University of Angers-INRA-Agrocampus Ouest) and Hortensias France Production laboratory was set up on 1st March 2019, under the auspices of the French National Research Agency. The objective is to develop innovative tools and methods so as to limit the use of synthetic chemistry in the production of hydrangeas. An introduction to this LabCom project will be made.

Speakers : Nathalie LEDUC, unité IRHS (Inra-Agrocampus Ouest-Université d'Angers)

## **10h30 - 11h - Spectrum and intensity modulable LED lighting system: first feedback for a tomato crop experiment**

The CTIFL in Carquefou has LED lighting equipment that can be monitored and adjusted according to the light spectrum and intensity. This survey was carried out in a partnership with VGD (Vegetal Grow Production). For this first year of the survey, the following variety was chosen: Climston (Sy) grafted on DRO 141 (DRS). The objective was to increase production performance and the quality of the fruits produced. Several situations were tested in order to select the wave lengths according to the set objectives and the plant needs. A presentation of the findings will be made.

Speakers : E. LEGAST, CTIFL

## **11h15 - 11h45 - Blockchain: Challenges for fruit and vegetable crops, wine growing and horticulture**

Speakers : Hervé PILLAUD, ancien agriculteur, consultant conférencier, Membre du Conseil National du Numérique

## **12h - 12h30 - A farmer / moderator testimony for DEPHY / 30 000 groups - Ecophyto**

This is a twofold testimony. First, the human aspect. How to moderate an information exchange group and the group's dynamics. Second, the reduction of phytosanitary products. How to secure and sustain organic market gardening systems, get good yields with a low level of inputs and no synthetic phytosanitary products and mitigate the use of organic phytosanitary products such as natural pyrethrum and copper.

Speakers : Thomas QUEUNIET -Civam bio 53

## **13h45 - 14h15 - AgriFarmLab and the co-development of AgTech solutions with the producers**

Hosted by VEGEPOLYS VALLEY

Speakers :

- Partners of the AgriFarmLab
- Testimonies from AgriFarmLab concours prize-winning companies offering digital solutions, notably Advansee

## **14h30 - 15h - Traceability solutions/big data in the plant production sector : pitches from companies**

Hosted by VEGEPOLYS VALLEY

Speakers :

- Partners of the European TRACK project
- Companies supported by this project, including SITIA or Weenat for France

## **15h15 - 15h45 - Grass management in orchards with poultry**

A group of poultry and gallinaceous were introduced on an organic orchard. For two years now the La Morinière station has been measuring the effects on grass growing and populations of pests. Technical and economic factors are also studied so as to assess the relevance of such a method.

Speakers : Fanny LE BERRE - Station de La Morinière

## **16h - 16h30 : Introduction to the European system of plant variety protection and to CPVO (Community Plant Variety Office)**

More than 28,000 plant varieties of all sectors are today protected on the whole European territory. Come and discover how this European system works, what are its specificities and how the office in charge of it (CPVO) operates.

## **16h45 - 17h15 : Are non-Saccharomyces yeasts interesting ?**

The interest of non-Saccharomyces yeast during pre-fermentation and for bio-protection in terms of organoleptic, microbiological and fermentation profile Introduction to tests carried out in laboratories and experimental wineries and to practical recommendations according to grape varieties or product objectives.

Speakers : IFV

## **17h30 - 18h - Fertilisation and irrigation: the secrets of a successful organic tomato**

In organic farming, the tomato caliber may decrease after the fourth bunch. Update on experimental results and solutions to counter this phenomenon.

Speakers : Maxime CHABALIER, Chambre d'Agriculture Pays de la Loire

## **9h45 - 10h15 - How to increase the shelf life of amercups in organic market gardening ?**

Update on tests carried out by the Chamber of Agriculture of Britany on how to substantially increase the shelf life of fruits. (Project Optipot)

Speakers : Maet LELAN, Stations expérimentales des Chambres d'Agriculture de Bretagne

## **10h30 - 11h - Making a difference and creating value with communication under the French Egalim legislation ?**

How to make a difference and create value with communication, in a regulatory environment where there is a separation between selling and advice. Customisation, reactivity, customer experience and use of all available and relevant tools, so many possibilities for communication actions. In an age of never-ending information, where is value in communication ? According to what criteria? Is it possible to make a difference with a relevant and targeted communication ? Beyond the technical aspects, what are the other topics to work on ? What is the role of digitization in my communication strategy ?

Speakers : Laurent PERON, EVOXYA

## **11h15 - 11h45 - Survey on issues for cold and less heated sheltered crops - ABRI'NOV project**

Speakers : Pierre Yves LALAUX, CTIFL

## **13h45 - 14h15 - Is the High Environmental Value certification an asset for my business ?**

Since 2014, the Chamber of Agriculture of Pays-de-la-Loire has been supporting farmers looking for the HEV (High Environment Value) certification. With the testimonies of a wine grower, a trader and an advisor you will discover or re-discover how the HEV approach can be used for an agro-ecological transition and why it is a commercial asset for business.

Speakers : Chambre d'agriculture des Pays de la Loire

## **14h30 - 15h - The French association for a professional urban agriculture : introduction and return of experience**

Presentation of the members and actions of AFAUP and testimony from a member working in fruit, vegetables and aromatic herbs hydroponic crops on roofs (Aeromate).

Speakers : Anne-Cécile DANIEL, Co-fondatrice et coordinatrice nationale de l'AFAUP et un(e) représentant(e) de l'entreprise Aeromate.

## **15h15 - 15h45 - Cifres PhD students in your company: an opportunity to boost R&D? PhDs a springboard toward research and innovation**

For more than 30 years, the Cifre (Training through research convention for the industry) has been subsidizing all companies operating under French law and hiring a PhD student to work on a research project with a public laboratory. The result of the 3-year work should be a PhD thesis. So, working on a thesis in a partnership with a company or an association is possible! Are you looking of state of the art, internationally recognised scientific skills to set up a network of partners ? You can entrust a PhD student with a research project shared between your organization and a research laboratory.

Speakers : Dominique VOLLET, Directeur Délégué d'AGROCAMPUS OUEST campus d'ANGERS, Directeur de la recherche et Marilyne HUCHET, Professeure et Directrice adjointe de la recherche en charge du doctorat

## **16h - 16h30 - Observation and prevention of damage by birds to crops**

Speakers : M. DAVY, CTIFL

## **16h45 - 17h15 - Knowing the causes of low yields so as to use the best solutions: examples from two networks of the Loire valley**

Many factors, such as age, crop practices, annual diseases or decline, influence the production capacity of a plot. Agronomic indicators in two test networks on the Loire valley, each having a different structure and production objectives, enabled the validation of a plot diagnosis to rank the root factors of yield inter-annual fluctuations and specify their frequency and impact. This should lead to recommendations and adaptations of technical operations to mitigate yield losses.

Speakers : Marie BONNISSEAU et Guillaume DELANOUE, IFV Pôle Centre Val de Loire

**9h - 10h30 - AGREEN STARTUP final jury**

## **AGREEN** **STARTUP**

**10h45 - 11h15 - Setting up as an organic small fruit grower : testimony of a producer on success factors**

The success for an organic small fruit farm depends on technical, economic, environmental and social factors. A farmer will introduce some key elements that may help people who have a farming project.

Speakers : Emmanuelle CHOLLET, CAB Pays de la Loire et Cécile LECHAT, productrice

**11h30 - 12h - GROOF - A European project: synergy between urban agriculture and buildings**

New horticultural production tools working in symbiosis with architecture may revolutionise the future of cities and agriculture. Productive greenhouses on rooftops are progressively becoming a reality. The GROOF European research project has been studying this type of agriculture since 2017. An international call for projects has been launched and pilot projects are being set up!

Speakers : Guillaume MOREL CHEVILLET, Astredhor

**12h15 - 13h30 - AGREEN STARTUP award ceremony**

## **AGREEN** **STARTUP**

**13h45 - 14h15 - The DEPHY networks : 10 years of experience on agro-ecological transition**

Groups illustrates the many business adapted ways used to mitigate the use of phytosanitary products. With a focus on vine growing groups, we will review the phytosanitary product reduction methods that proved their efficiency. We will also introduce the change support methods proposed to Charentes and Val de Loire farms. The 2018 assessment show that this support led to a 17% reduction in the use of phytosanitary products as from date of entry in the group and the 2015, 2016 and 2017 average.

Speakers : Guillaume GASTALDI, Chambre d'Agriculture des Pays de la Loire

ALICE REUMAUX, Chambre d'Agriculture du Loir-et-Cher

PASCAL MARAN, OCEALIA

Ludovic ZAPIRAIN et Laurent BENOIST, viticulteurs

### **14h30 - 15h - Terralab, assistance to company projects**

TerraLAB is an incubator for agricultural activities that connects local authorities having an agricultural development project with project owners looking for land and support. TerraLAB, as an association, is creating a network of expert coaches, trainers and partners who make their skills available to project owners. The management of land and investment is made by the local authorities and the association, thus limiting the financial risk at the start of the activity. The system allows a full time focus on production and marketing.

Speakers : Chambre d'Agriculture des Pays de la Loire

### **15h15 - 15h45 - Vegetable crop protection with repelling/detering plants - the REPULSE project**

The REPULSE project aims at developing and evaluating associations of plants that have a repellent or deterring effect on thrips, aphids and flies, thus limiting the use of synthetic insecticides. This project will be carried out by combining an analysis of plant Volatile Organic Compounds (VOC), a characterisation of the crop olfactive landscape, field experiments and sociological analyses.

Speakers : Sébastien PICAULT, CTIFL

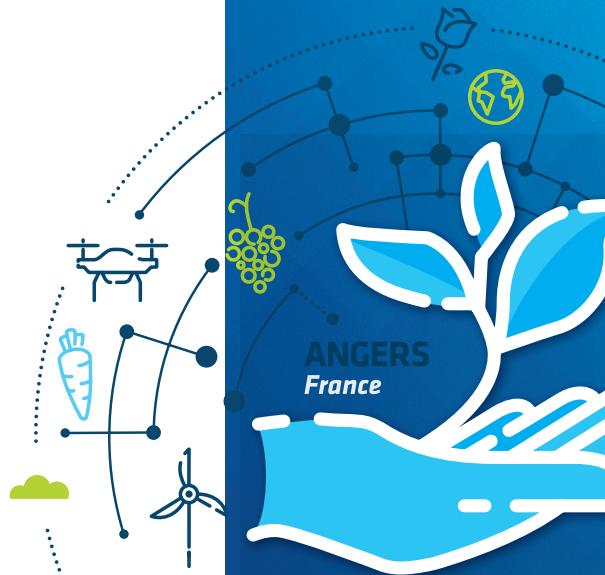
### **16h - 16h30 - How to integrate covered agriculture in organic market gardening crop rotation ?**

Covered agriculture is one of the possibilities to manage soil fertility and system sustainability in organic farming. The often rapid and intense crop rotation in market gardening do not leave them much space. How can they be integrated for the better ?

Speakers : Maëlle DEPRIESTER, CDDL



# NOTES



# ANGERS

## Capital of plant

- It has been the region's speciality for centuries, reaching beyond frontiers.
- An exceptional concentration of the sector's members: training, research, businesses.
- Precious know-how : capacities for innovation as a direct response to the challenges of today and the future.
- A region for discovering and discussing plant production: for professionals, students, inhabitants and tourists.
- Exceptional landscape heritage: 1st green town in France, Val de Loire listed as a UNESCO World Heritage Site.

### Angers, a region for plant events

- > Séminaire du Groupe d'Etude de l'Arbre (23-25/10/19)
- > Asparagus world Summit (29-30/10/19)
- > ESAfoodtech (21/11/19)
- > SIVAL (14-16/01/20)
- > Food'Angers (31/01-9/02/20)
- > Salon des Vins de Loire (3-4/02/20)
- > ExpoFlo (20-22/03/20)
- > Salon du Végétal (8-10/09/20) ;
- > but also the Congrès International de l'Horticulture (14-20/08/2022).





## Support from **ANGERS LOIRE METROPOLE** for the **SIVAL 2020**



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« For the last 30 years, the SIVAL, in Angers, has been an unmissable event for members, both nationally and internationally, of the specialist plant production sector. The SIVAL, without doubt, contributes to the expansion and momentum of the plant sector in the Angers region, the amazing work being carried out each year by the organising committee must also be emphasised. Angers Loire Métropole is proud to support this event as it offers numerous opportunities for the economic development of professionals, whilst remaining coherent with the future challenges facing agriculture: a top showcase for equipment and services, discussions with experts, and employment area, innovations that serve the sector, business meetings at an international level... Rendezvous in January 2020 in Angers in order to « cultivate success » ! ».

**Jean-Pierre Bernheim**

Vice-Président d'Angers Loire Métropole,  
chargé du développement économique

# NOTES







**SALON INTERNATIONAL**  
DES TECHNIQUES DE PRODUCTIONS VÉGÉTALES

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