

Welcome to the Ctifl Balandran Centre



**Making progress for all those involved in the fruit
and vegetable industry**

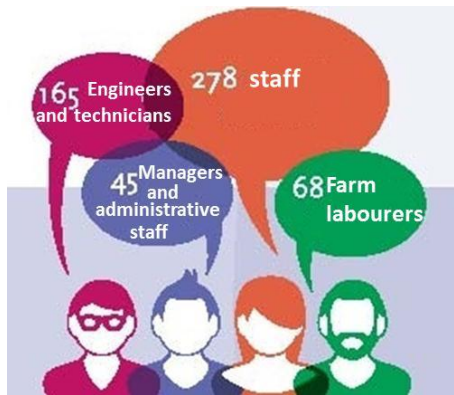


The Ctifl

Institute for Applied Research on Fruit and Vegetables

- Established in 1952 under the law passed on 22nd July 1948 concerning Industrial Technical Centres, Ctifl is a non-profit organisation

- 278 staff



- Executive committee production /trade : 14 directors, 1 state inspector, 1 government commissioner

- Website: <http://www.ctifl.fr>



The Ctifl

Institute for Applied Research on Fruit and Vegetables



Carquefou Centre
44483 Carquefou Cedex



Lanxade Centre
24130 Prignonrieux



Balandran Centre
30127 Bellegarde



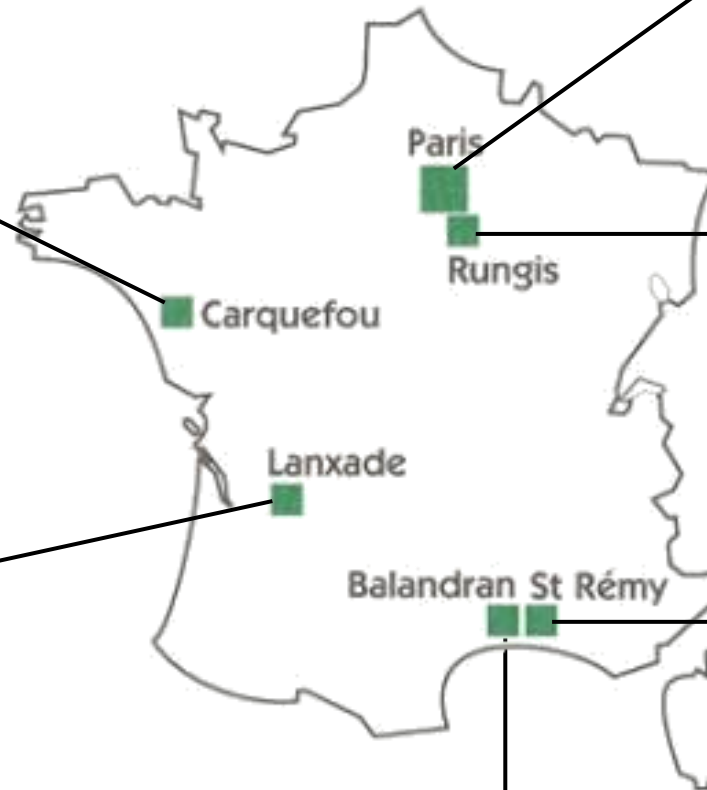
Head Office Paris
75009 Paris



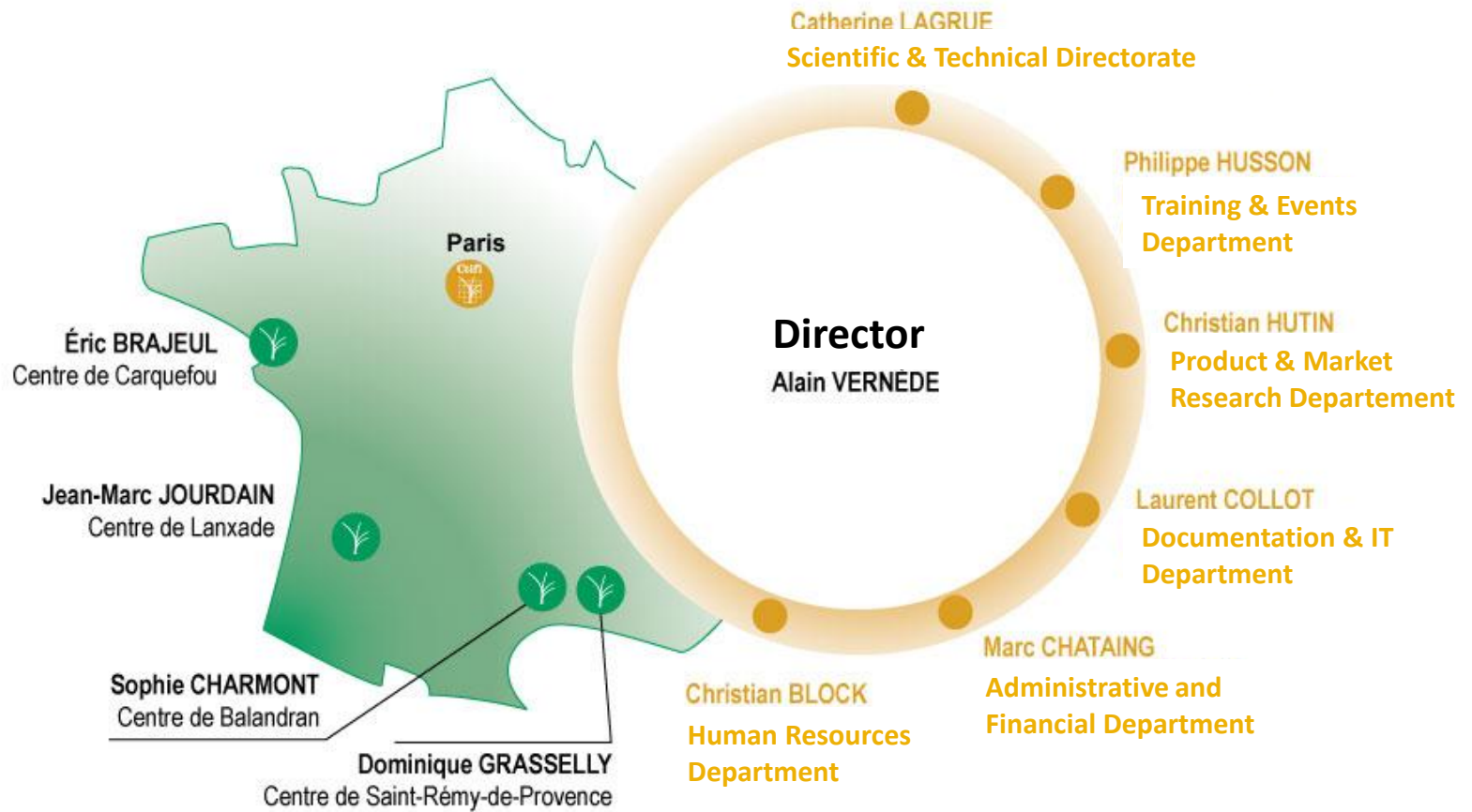
Rungis Site
94632 Rungis Cedex



St-Rémy-de-Provence Centre
13210 St-Rémy-de-Provence

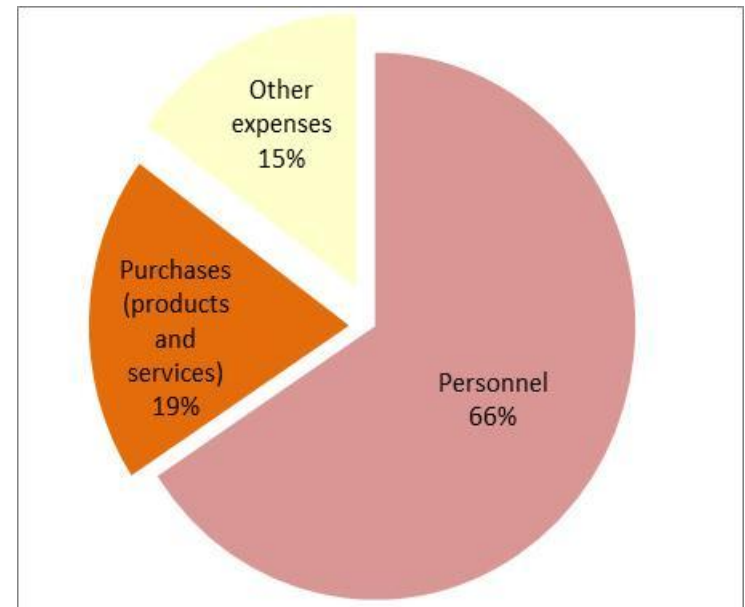
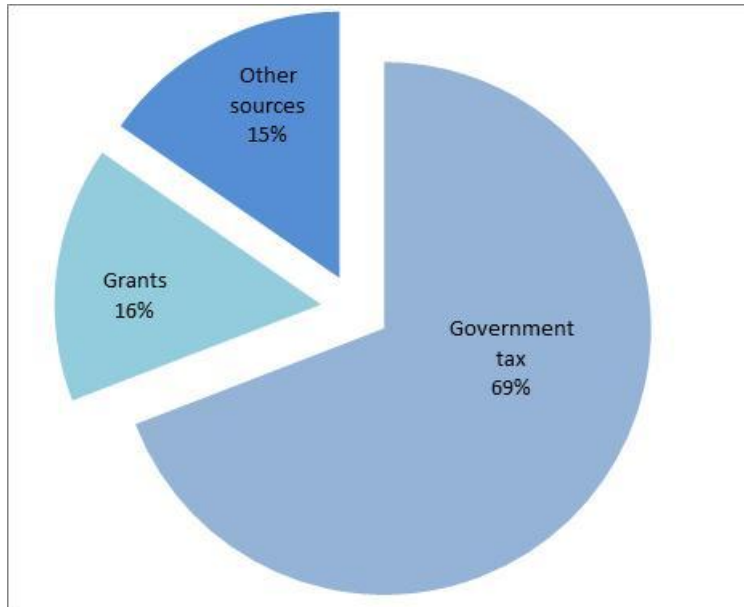


Organisation



Financial Resources

- Budget of 25,2 M€



- ↳ In 2016 abolishment of Government tax
- ↳ In 2015 setting up another financial resource (« Contribution Volontaire Obligatoire », i.e. Mandatory Voluntary Contribution)



Product and Market Research Department








- Studies on product image, consumer behaviour...
- Standing survey of industry companies : growers, shippers, wholesalers and retailers

-Retail outlet monitoring

- Markets:

- Studies on individual products
- Statistical data and key figures
- Production/availability calendars and international competition

Evolution of purchasing	Difference 2013/2012
	+ 20 %
	+18 %
	- 7 %
	+ 17 %
	- 4 %



*Market and distribution of Onion
Study 2013*



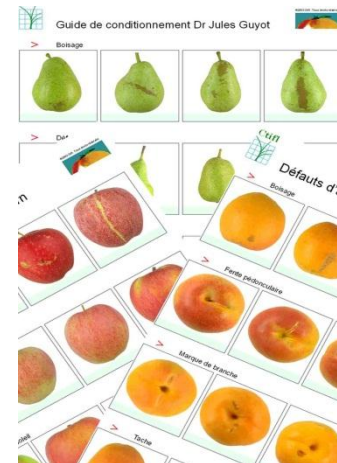
*Zucchini Market (France 3rd producer of
the EU) – Study 2013*



Training and Events Department

- Training
 - Product knowledge
 - Organisation and management of retail outlets
 - Quality : logistics in warehouses, management
 - Growing techniques
- Industry events and conferences
- Technical assistance : quality processes, specifications, guidelines

*243 training courses
1749 participants in 2013*



Produce packing guideline



Events in supermarket



Scientific & Technical Directorate



- Varieties
- Crop management
- Integrated pest management, alternative pest control methods, biodiversity
- Storage
- Traceability and food security
- Fruit tree certification
- Coordination of regional experimental stations

*The highest Department :
104 employees*



Research Divisions:

- Varieties
- Plant Health et biological control
- Agroecology and crop systems
- Greenhouses
- Post Harvest Management
- Quality and measurements



Balandran Centre

At the heart of production area : $\frac{1}{4}$ of French fruits and vegetables

Working closely with the centre in St-Rémy-de-Provence specialising in quality and technology



• Key figures :

75 ha :

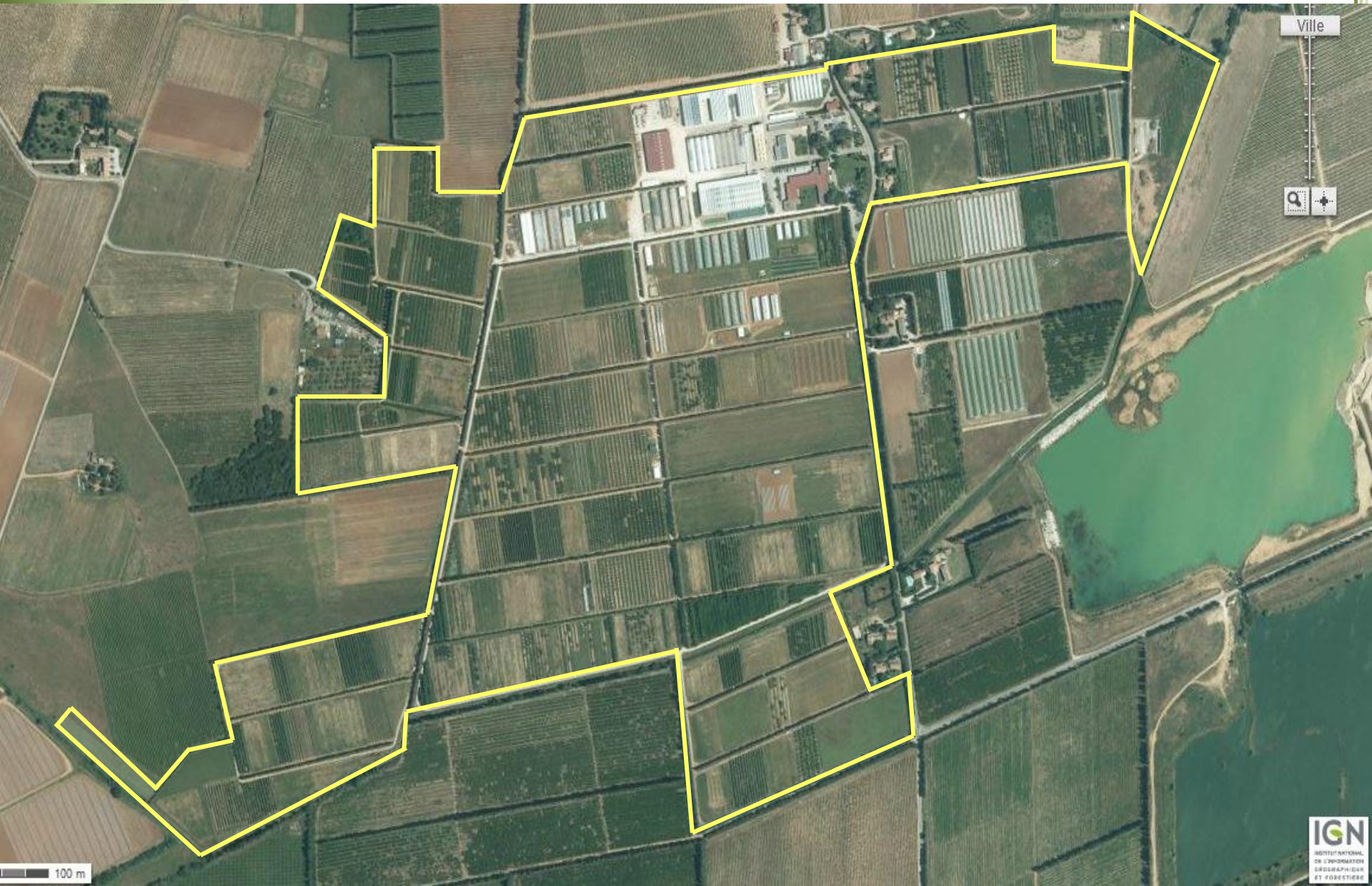
- 2,4 ha of greenhouses and tunnels
- 43 ha of orchards, 19 ha in production
- 20 ha of field vegetables
- 3 ha in organic agriculture

76 staff:

- 38 engineers and technicians
- 38 farm labourers
- 45 seasonal workers
- 30 trainees and fixed-term contracts



Balandran Centre



Balandran Centre

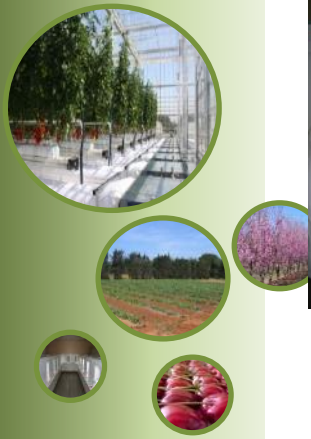
- Laboratories
 - In vitro culture
 - Entomology
 - Soil – plants
 - Sensory analysis
 - Authorised « Good Experimental Practices » facility for officially recognised trials



Sensory evaluation laboratory

AFNOR standard V09-105

- A quality evaluation tool
- People assess quality criteria
- An additional tool for physico-chemical measurements
- The only way to evaluate certain criteria (meltiness, aroma, mealiness...)



Sensory evaluation laboratory

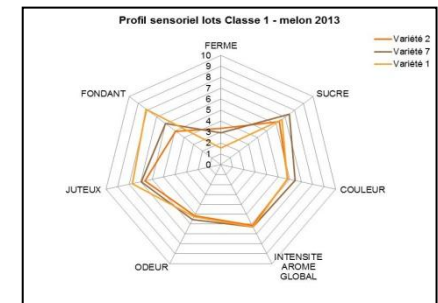
AFNOR standard V09-105



- Varietal characterisation
- Study of the impact of cultural and storage techniques
- Identification and explanation of consumer preferences
- 3 to 5 panels of experts trained each year on the following species:



- Hedonic tests with groups of « naive » consumers



Main objectives

- Variety and rootstock evaluation
- Optimising crop management: mechanisation and reducing inputs (energy)
- Study alternative crop protection methods



Research hub « Varieties » - Fruits

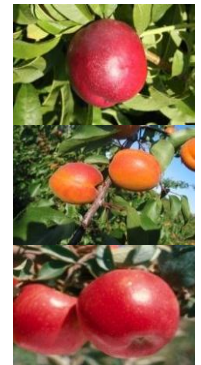
- Evaluation of new varieties and rootstocks
 - 500 varieties in observation for peach, 400 for apricot, 270 for cherry, 260 for apple,...
 - Pollen compatibility
 - Varietal fact sheets
 - Chilling requirements and sensitivity to frost
 - Consumers preference mapping



- Oneline database « EFI Pêche® »

- Crop management

- Systems
- Thinning



Research hub « Plant Health and biological control » - Fruits



- Stone-fruit crop protection

- Alternative techniques
- New molecules
- Emerging insects pests

- Approval of pesticides



Research hub « Agroecology and crop systems » - Fruits

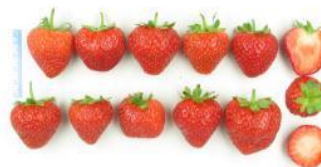


- Role of vertebrate and invertebrate beneficials in pest control
 - Study of *Coleoptera* in the soil
 - Study of *Araneae*
 - Study of bat and bird diets



Research hub « Varieties » – Vegetable

- Evaluation of varieties and rootstocks
 - Varietal characteristics
 - Results on online data bases (SOLEN[©]-Tomato, Franet[©] - Strawberry)
 - Chilling requirements of strawberry



Besoins en froid pour le fraisier

Besoins par variété

Source "La culture du fraisier sur substrat - Ed Ctifl 2003" p.26

< 700 h	700 - 900 h	900 - 1200 h	> 1200 h
Camara	Garguette	Diaslect	Ekanta
Agathe® Sweet Charlie	Copake	Crisne	Contra
Naxos® Cx15	Chiffrette		Vakta
Chander	Madeline® Cimal		Okie
Variétés californiennes	Pigra		Florence
			Senga Sengana
			Sonata



Research hub « Plant Health and biological control » – Vegetable



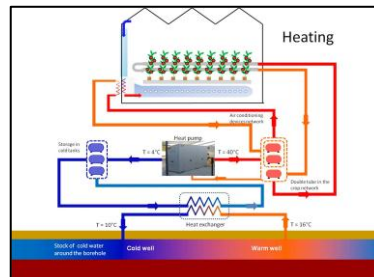
- Decision-making tools and alternative methods
 - Approval (assistance in pesticide registration)
 - Reducing impact of pesticide (Ecophyto)
 - Crop rotation, improving techniques : ramial chipped wood, soil solarisation, biofumigation,...



Research hub « Greenhouses / Agroecology and crop systems » – Vegetable



- Greenhouses hub
 - Test of thermal Heat Exchanger
 - Semi-closed greenhouse
 - Recycling greenhouse wastewater
- Agroecology and crop systems hub
 - PilAzo® on tomato, eggplant, sweet pepper, melon
 - Nitrogen fertilizer management on open field eggplant crops in vulnerable zones



grille de pilotage Aubergine																	
N03 en mg/l	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
>4500																	
3500 à 4500																	
2500 à 3500																	
1500 à 2500																	
< 1500																	
remarque après plantation	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	

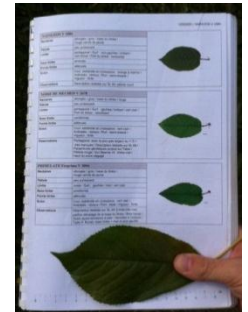


Fruit certification

- Objective : guarantee trueness to type and sanitary status
- Request of Ministry of Agriculture
- Official technical regulations
- ~60 certified voluntary nurseries
- Ctifl missions :
 - Field inspections
 - Administrative checks
 - Sanitary analysis
 - Biomolecular analysis

4-person team + 2 at Lanxade + virology
11 000 working hours per year

	HATIF BURLAT INFEL® 370 VIRUS FREE	RÈGLES ET NORMES C.E.	
	MAXMA DELBARD® 60 INFEL® 4337 VIRUS FREE Broksecc	PASSEPORT PHYTOSANITAIRE C.E.	
	Valable pour 1 PLANT CERTIFIÉ VF	FRANCE PRUNUS N° 092609078	



In vitro strawberry production

- A laboratory with 39 years experience
- Conservatory of varieties and rootstocks
Strawberry, walnut, cherry, raspberry, witloof chicory
- Production of F1 strawberry plants
450 000 plants per year



Technical coordination



Ctifl Centres



Regional experimental stations
with Ctifl engineers



Regional experimental stations
without Ctifl engineers



Stations régionales Partenaires

- 1 APREL
- 2 AREFE
- 3 CATE
- 4 CEFEL
- 5 CEHM
- 6 CREYSSE
- 7 Station Expérimentale
de l'andive - APEF
- 8 LA MORINIÈRE
- 9 LA TAPY
- 10 LÉGUMES CENTRE ACTION

11 PÔLE LÉGUMES Région Nord

- 12 SECL 22
- 13 SEFRA
- 14 SENURA
- 15 SERAIL
- 16 SILEBAN
- 17 INVENIO

Stations régionales Associées

- 18 ANPN
- 19 ACPEL
- 20 ADIDA

- 21 AREFLEC
- 22 ARELPAL
- 23 ARMEL
- 24 CDA 21
- 25 CENTREX
- 26 Chambre d'Agriculture du Calvados
- 27 QVAM BIO
- 28 GRAB
- 29 LA PUGÈRE
- 30 PAIS (IBB)
- 31 PLANÈTE LÉGUMES
- 32 SEHBS
- 33 SERFEL
- 34 VEREXAL










Technical coordination

- Leading working groups on fruit and vegetables with technical partners (regional experimental stations, Chambers of Agriculture, scientists (INRA,..) and growers

- Experimental working groups:    

Biodiversity, apple trees thinning, mechanisation, ACLR/psylla, plum pox virus, *Monilia* diseases, fruit flies, *Xanthomonas*, organic agriculture, environmental indicators.

- Working groups on varieties and rootstocks: peach, cherry, apricot

- Experimental working groups :       

Energy and greenhouse equipment, integrated pest management.

- Working group strawberry varieties



Projects in progress

- Currently 22 projects: AAP Casdar (11), ANR (1), Ecophyto (7), H2020 (2), FranceAgriMer (1), FUI...
- 4 PNDAR 2014-2020 programmes: varieties, organic agriculture, biodiversity, and agroecology



Dissemination of information

- Sales of publications
- Dissemination of our own documentary products
- Monitoring of technological developments
- Access to databases
- Multimedia library service

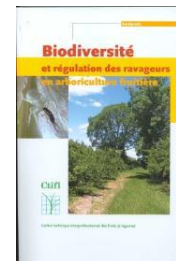
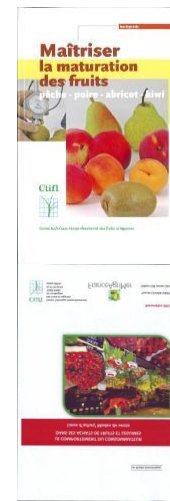


Videos, DVD and CD-Rom



- Recent Ctifl publications (*in French*)
 - Strawberry- Physiology and types of plants - Feb. 2014
 - Biodiversity and pest management in orchards - Nov. 2012
 - Garlic -September 2012
 - Improving fruits ripening- September 2012


- Ctifl Economic studies (*in French*)
 - Consumers purchasing behaviour regarding fruit and vegetables - January 2014



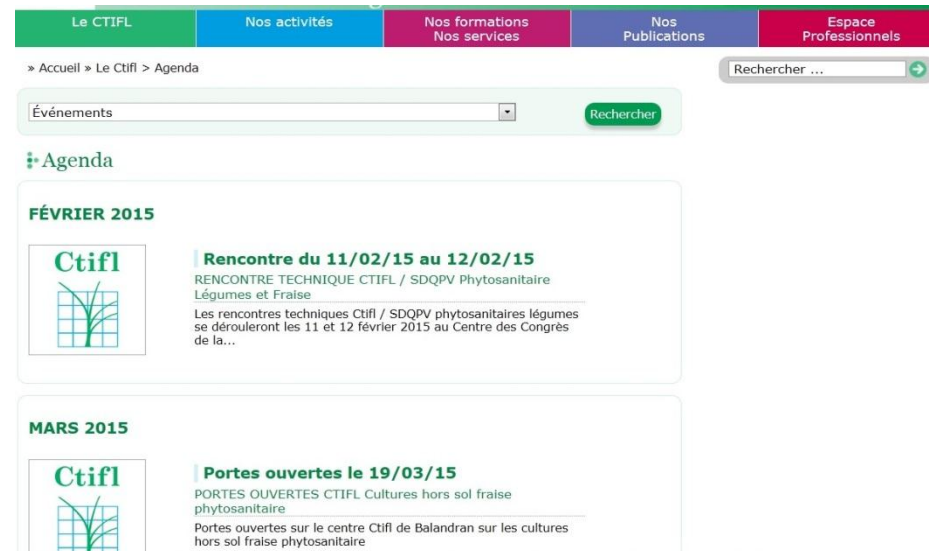
Dissemination of information

- Website: <http://www.ctifl.fr>

**Total number of
sessions in 2013
870 000**



The screenshot shows the Ctifl website homepage. The navigation bar at the top includes: Le CTIFL, Nos activités, Nos formations Nos services, Nos Publications, and Espace Professionnels. The main content area features a search bar with the text "Rechercher ...", a dropdown menu for "Infos Ctifl", and a "Recherche" button. Below the search bar, there is a section titled "Infos Ctifl" with a paragraph of text and a small image of a plant. To the right, there is a section titled "Abonnement" with a link "Abonnez-vous à Infos Ctifl" and a section titled "Hors série - Infos Ctifl" with a link "Dossier GIS PICLÉG - Biodiversité fonctionnelle en productions légumières".



The screenshot shows the Ctifl website agenda page. The navigation bar at the top includes: Le CTIFL, Nos activités, Nos formations Nos services, Nos Publications, and Espace Professionnels. The main content area features a search bar with the text "Rechercher ...", a dropdown menu for "Événements", and a "Rechercher" button. Below the search bar, there is a section titled "Agenda" with a list of events. The first event is "Rencontre du 11/02/15 au 12/02/15" with the subtitle "RENCONTRE TECHNIQUE CTIFL / SDQPV Phytosanitaire Légumes et Fraise". The second event is "Portes ouvertes le 19/03/15" with the subtitle "PORTES OUVERTES CTIFL Cultures hors sol fraise phytosanitaire".



Dissemination of information

- Events: technical meetings, national conferences
- 700 à 800 visitors per year



*Open house day
Strawberry/Tomato – 2013
85 visitors*



*National conference
Tomato – 2011
200 participants*



*Conference on Peach
varieties – 2013
110 participants*



*Technical meeting
Fruits ripening – 2014
77 participants*



*Technical meeting
Energy in greenhouses – 2013
84 participants*



*Open house day
Vegetables – 2013
63 visitors*

