

## Scanning report Charlot Gérard (Ctifl)

- \*Project title (native language):** EUFRUIT : Réseau européen d'évaluation des fruits
- \*Project title (English):** EUFRUIT: European Fruit Network
- \*Author/native language editor:** Charlot Gérard, Ctifl, 751, Chemin de Balandran, 30127 Bellegarde, France.  
charlot@ctifl.fr, +33 (0)4 66 01 10 54

### Section A. Summary for EIP dissemination

- \*Keywords:** Variety testing, stone fruits, cherry
- \*Main geographical location:** FR812 Gard
- Other geographical locations:** FR8 Méditerranée; FR81 Languedoc-Roussillon
- \*Summary (native language):**

En France, la création variétale cerise est réalisée par un acteur public, l'INRA et un acteur privé, Agro Sélection Fruits. Les variétés sont créées pas les obtenteurs (par croisements) et diffusées par les éditeurs. Pour la cerise il y a 9 éditeurs. Il n'y a pas de création de porte-greffe en France. Les variétés sont, dans la majorité des cas, inscrites au catalogue des nouvelles variétés. Cette étape est réalisée par l'Inra, qui est également en charge de l'étape DHS (Distinction, homogénéité, stabilité). Enfin, les variétés passent par une phase d'évaluation au sein d'un réseau d'évaluation composé du Ctifl (responsable de la coordination) de l'INRA et des stations d'expérimentation régionales.

Chaque année 12 variétés sont introduites pour l'espèce cerisier. Elles sont évaluées par les différents sites du réseau. Les critères d'évaluation portent sur la conduite de l'arbre, la phénologie, les potentiels agronomiques, la présentation et qualité gustative des fruits ainsi que sur la sensibilité des variétés aux maladies et ravageurs. Des études sont également menées sur l'évaluation des porte-greffe.

Le développement des variétés de cerise en France vise à étendre et compléter le calendrier de maturité pour disposer de variétés performantes durant toute la saison. On cherche notamment à remplacer la variété précoce Burlat qui est l'une des principales variétés de cerise cultivées en France mais qui a des limites agronomiques (sensibilité aux hivers doux, calibre et fermeté insuffisants). La variété idéale doit répondre à un certain nombre de critères, à savoir un haut niveau de production y compris après un hiver doux (charge et calibre), une faible sensibilité aux fruits doubles, une bonne qualité organoleptique et une belle présentation des fruits. On cherche également à sélectionner une gamme de cerises bicolores pour le marché de bouche qui viendrait compléter l'offre actuelle, essentiellement limité aux cerises rouges.

Enfin on recherche si possible des variétés à la maturité groupée afin, de limiter les temps de récolte et de mieux gérer la protection vis-à-vis de *Drosophila suzukii*.

Idéalement, les variétés retenues doivent également avoir une moindre sensibilité à l'éclatement et au *Monilia*. De plus, pour faciliter la protection sanitaire, les variétés autofertiles sont recherchées.

Pour les porte-greffe, on cherche à sélectionner une gamme de porte-greffe de différente vigueur pour s'adapter aux différentes conditions de sol, de climat et de systèmes de conduite (gobelet, axe, biaxe, palmette, KGB, UFO). Ces porte-greffe doivent avoir une bonne productivité et une bonne tolérance aux températures élevées en été.

### Summary (english):

In France, breeding program is carry on by two actors, one is public, INRA and one is private, Agro Sélection Fruits. The evaluation of the plant material is organized in different steps involving various actors. The breeders are responsible of hybridation and creation of the new varieties. There are 9 editors for the cherry. The editors are responsible of the distribution of the varieties. The varieties are following a process to be registered and evaluated. Inra (French National Institute for

Agricultural Research) is responsible of the registration of the varieties in the "catalog" and realize the DUS (Distinction, Uniformity and Stability) phase. After this step, the Ctifl, INRA and regional technical centers are proceeding to the evaluation of new cultivars.

Each year 12 cherry cultivars are introduced and assessed on the different sites of the network. The criteria that are observed are the tree (vigor, shape...), the flowering and phenology (floribondy, pollination), the agronomic potential (maturity, entering in production, yield and fruit size), the fruit (presentation / attractiveness) and the sensitivity to cracking and *Monilia*. The evaluation of vegetal material is led on rootstocks and on new cultivars.

The objective of cherry varieties development in France is based on various goals. One goal is to extend and complete the planning of maturity to dispose of good varieties during all the season and for all subspecies. Especially we need to replace Burlat, the most important early variety, which has several defaults (sensitive to mold winter, insufficient size and firmness). The ideal variety need to be very productive with a good fruit size and need to guarantee the regularity of production (not susceptible to mild winter) and not sensitive to double fruits. We also plan to select blush varieties to complete the current choice which is limited to one variety (Rainier).

The new varieties have to propose a good organoleptic quality and a good presentation of the fruits. Ideally, we also try to select varieties which are self-fertile and with less sensitivity to cracking and *Monilia*.

The objective of cherry rootstocks is to select a complete range of rootstocks, adapted to different, climatic and soil conditions and training systems (vase, axe, biaxe, palmette, KGB, UFO) : dwarfing, semi-dwarfing, vigorous rootstocks with a good productivity and a good growth vegetation (not sensitive to hot temperatures in summer).

## Section B. Project information

**\*Project coordinator:** Michelle H. Williams; Aarhus University, Department of Food, Kirstinebjergvej 10, 5792 Aarslev, Denmark; mw@food.au.dk; +45 25170049

**\*Project period:** 2016 - 2019

**\*Project status:** Ongoing

**\*Funded by:** Horizon 2020

**\*Total budget:** €1.8m

**\*Geographical regions:** DK011 Copenhagen, DK012 Copenhagen and its environs, DK013 North Zealand, DK014 Bornholm, DK021 East Zealand, DK022 West- and South Zealand, DK031 Funen, DK032 South Jutland, DK041 West Jutland, DK042 East Jutland, DK050 North Jutland, BE211 (Arrondissement. Antwerpen), BE212 (Mechelen), BE213 (Turnhout), BE221 (Hasselt), BE222 (Arr. Maaseik), BE223 (Tongeren), BE231 (Aalst), BE232 (Dendermonde), BE233 (Eeklo), BE234 (Gent), BE235 (Oudenaarde), BE236 (Sint-Niklaas), BE241 (Halle-Vilvoorde), BE242 (Leuven), BE251 (Brugge), BE253 (Ieper), BE254 (Kortrijk), BE255 (Arr. Oostende), BE256 (Arr. Roeselare), BE257 (Tielt), BE258 (Veurne), BE310 (Nivelles-Nijvel), BE331 (Huy-Hoei), BE332 (Liège- Luik), BE334 (Waremmе-Borgworm), BE335 (Verviers), , FR6 SUD-OUEST, FR512 Maine et Loire, FR611 Dordogne, , DE6 (Hamburg), DE8 (Mecklenburg-Vorpommern), DE9 (Niedersachsen), DEF0 (Schleswig-Holstein), DEE0 (Sachsen-Anhalt), DEA (Nordrhein-Westfalen), DE111, DE112, DE113, DE114, DE115, DE116, DE117, DE118, DE119, E11A, DE11B , DE11C, DE11D, DE121, DE122, DE123, DE124, DE125, DE126, DE127, DE 128, DE129, DE12A, DE12B, DE12C, DE131, DE132, DE133, DE134, DE135, DE136, DE137, DE138, DE139, DE13A, DE141, DE142, DE143, DE144, DE145, DE146, DE147, DE148, DE149, DE600 Hamburg, DE932 Cuxhaven, DE933 Harburg, DE939 Stade, DEF09 Pinneberg, NL1-NL4 + NLZ Holland; NL 224 zuidwest Gelderland, NL 226 Arnhem/Nijmegen, NL230 Flevoland, NL310 Utrecht, NL321 Kop van Noord-Holland, NI322 Alkmaar en omgeving, NL338 oost Zuid-Holland, NL33A zuidoost Zuid-Holland, NL341 Zeeuws-Vlaanderen, NL342 overig Zeeland, NI411 west Noord-Brabant, NL413 noordoost Noord-Brabant, NL414 zuidoost Noord-Brabant, NL421 noord Limburg, NL422 Midden-Limburg, NL423 zuid Limburg, ES620 Murcia, UKG11 Herefordshire, UKG12, Worcestershire, UKH12 Cambridgeshire, UKH16 North and West Norfolk, UKH17 Breckland and South Norfolk, UKJ22 East Sussex, UKJ35 South Hampshire, UKJ36 Central Hampshire, UKJ37 North Hampshire, UKJ41 Medway, UKJ42 Kent, UKJ43 Kent Thames Gateway, UKJ44 East Kent, UKJ45 Mid Kent, UKJ46 West Kent, ES618 Sevilla, ES511 Barcelona, ES512 Gerona, ES513 Lérida, ES514 Tarragona, CH0 Schweiz/Suisse/Svizzera, ITH51-59 Emilia Romagna region, ITH10 Bolzano-Bozen, HU101 Budapest, HU102 Pest, RO111, RO112, RO113, RO114, RO115, RO121, RO122, RO123, RO124, RO125, RO126, RO211, RO212, RO213, RO214, RO215, RO216, RO221, RO222, RO223, RO224, RO225, RO226, RO311, RO312, RO313, RO314, RO315, RO316, RO317, RO321, RO322 RO411, RO412, RO413, RO414, RO415, RO421, RO422, RO423,

RO424. HU101, HU102, LT001 Alytaus apskritis, LT002 Kauno apskritis, LT003 Klaipėdos apskritis, LT004 Marijampolės apskritis, LT005 Panevėžio apskritis, LT006 Šiaulių apskritis, LT007 Tauragės apskritis, LT008 Telšių apskritis, LT009 Utenos apskritis, LT00A Vilniaus apskritis.

**Project web page:** <http://www.eufrin.org/index.php?id=55>

**\*Project Objectives (native language):**

1. Etablir un réseau européen orienté sur les fruits
2. Développer et établir une approche systématique pour identifier et synthétiser les connaissances pratiques et scientifiques existantes.
3. Etablir un dialogue continu entre les institutions politiques régionales, nationales et européennes.
4. Identifier et soutenir de nouveaux axes de recherche prioritaires par un suivi continu et une analyse des activités de recherche existantes, futures et innovantes.

**Project Objectives (English):**

1. Establish a European network focused on the fruit sector.
2. Develop and implement a systematic approach for scanning and synthesizing existing scientific and practical knowledge.
3. Establish an ongoing dialogue with relevant EU, national and regional policy bodies.
4. Identify and support new priority areas of research by continually monitoring and analyzing existing and upcoming research and innovation activities.

**\*Project partners:**

1. Aarhus University, Department of Food Science (Denmark) • AU
2. Research Station for Fruit npo (Belgium) • Pcfuit
3. Centre Technique Interprofessionnel des Fruits et Légumes (France) • CTIFL
4. Obstbauversuchsanstalt Jork (Germany) • OVA
5. Stichting Wageningen Research (Netherlands) • WR
6. ~~East Malling Research (United Kingdom) • EMR (terminated 08-02-2016)~~
7. Institut de Recerca i Tecnologia Agroalimentàries (Spain) • IRTA
8. Federal Department of Economic Affairs, Education and Research (EAER), acting through Agroscope Institute of Plant Sciences (Switzerland) • Agroscope
9. Laimburg Research Centre for Agriculture and Forestry (Italy) • Laimburg
10. University of Agronomic Sciences and Veterinary Medicine of Bucharest (Romania) • USAMV
11. National Agricultural Research and Innovation Centre Fruitculture Research Institute (Hungary) • NARIC
12. Lithuanian Research Centre for Agriculture and Forestry (Lithuania) • LRCAF
13. Assemblée des Régions Européennes Fruitières, Légumières et Horticoles (France) • AREFHL
14. Variety Innovation Consortium South Tyrol (Italy) • SKST
15. Freshfel Europe (Belgium) • FRESHFEL
16. Elbe-Obst Erzeugerorganisation r.V. (Germany) • EO
17. Fruitconsult BV (Netherlands) • FC
18. University of Greenwich (United Kingdom) • UoG
19. University of Hohenheim (Germany) • UHOH
20. Università di Bologna (Italy) • UNIBO
21. Institut National de la Recherche Agronomique (France) • INRA
22. NIAB EMR (new 09-02-2016)

Section C. Annex: Scanning report<sup>1</sup>

## Scanning report Charlot Gérard, Ctifl

**Author:** Charlot Gérard, Ctifl, 751, Chemin de Balandran, 30127 Bellegarde, France.  
charlot@ctifl.fr, +33 (0)4 66 01 10 54

**Country:** France

**NUTS 3 region(s)<sup>2</sup>:** FR812 Gard

**WP no. and title:** WP 2 : Performance of new fruit varieties

**Date:** 12-04-2017

### Source materials and methodology

The Ctifl is an institute for applied research on fruit and vegetables. It was established in 1952 under the law passed on 22nd July 1948 concerning industrial technical centres, Ctifl is a non-profit organization of about 270 employees (including 164 engineers and technicians). The Ctifl is spread on 6 sites in France (including the head office in Paris).

All experimentation, studies, training and publications are aimed at improving the level of expertise necessary in all sectors of the fruit and vegetable industry, as well as improving company performance. Ctifl is particularly involved in carrying out work of general interest to the public sector under the aegis of the government. In answer to consumer concerns Ctifl's expertise contributes to managing quality, to guaranteeing food safety and hygiene as well as traceability, to preserving the environment and to striving for sustainable development. Facing society's demands and the challenges of tomorrow, Ctifl aids communication and consultation between all those involved in the fruit and vegetable industry.

The Ctifl, Centre of Balandran is at the heart of national production area (¼ of French fruits and vegetables) and works closely with the centre in St-Rémy-de-Provence (specialized in quality and technology).

The Ctifl, Centre of Balandran regroup 66 employees (39 engineers and technicians, 27 farm labourers, 45 seasonal workers, 30 trainees and fixed-term contract) and 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). The Ctifl works on various species of fruits and vegetables.

Concerning stone fruits. Ctifl works on peach-nectarine, apricot and sweet cherries. The evaluation of vegetal material is led on rootstocks and on new cultivars. The evaluation of the plant material in France is organized in different steps involving various actors. The breeders are responsible of hybridation and creation of the new varieties. The editors are responsible of the distribution of the varieties. The varieties are following a process to be registered and evaluated. Inra (French National Institute for Agricultural Research) is responsible of the registration of the varieties in the "catalog" and realize the DUS (Distinction, Uniformity and Stability) phase. After this step, the ctifl and regional experimental center are proceeding to the evaluation of new cultivars.

Testing new cherry varieties is organized around a "national chart" established by industry partners involved in varieties: growers (FNPF), nurserymen (CEP), Inra (research) and Ctifl (experimentation) since 1997. Ctifl is coordinating the national network of regional stations.

### Best practice findings

#### Cherry

The cherry production is mostly located in the south of France. The production is mainly located in two areas: PACA and Rhone Valley. A small part of the production is located in Occitanie and Pays de la Loire.

The production of cherry is continuously decreasing since the last 20 years. This can be partially explained by the impact of the climatic change (cherry is the mostly impacted species by the climatic change), phytosanitary crisis (*Drosophila suzukii*) and the

<sup>1</sup> Equivalent to 'final report' in EIP-AGRI format.

<sup>2</sup> Please see [ec.europa.eu/eurostat/ramon/nomenclatures/](http://ec.europa.eu/eurostat/ramon/nomenclatures/) for details on NUTS regions, level 3

increasing concurrence of other countries. In 2015 the sweet cherry production in France (include sweet cherry processing) represented about 7600 ha and 30 000 tons. The innovation is really important for new varieties of cherries.

The objective of the network is to realize a screening of agronomic and commercial interest of new varieties and, for the interesting cultivars, to define the optimum technical itinerary.

The first level of the network is composed of 3 sites: Ctifl, centre of Balandran (Bellegarde, 30), INRA Bordeaux (33), La Tapy (84).

The second level of the network is composed of 5 sites: La Tapy (84), Sefra (26 and 69), Cefel (82), Verexal (67).

The Ctifl is responsible of the coordination and the synthesis of the results. The sites are localized in different climatic situations and allow to evaluate the behavior of the cultivars in different pedo-climatic conditions.

The criteria that are observed are the tree (vigor, shape...), the flowering and phenology (floribondy, pollination), the agronomic potential (maturity, entering in production, yield and fruit size), the fruit (presentation / attractiveness) and the sensitivity to cracking and *Monilia*. The data are stored in a private database.

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