

## Scanning report (EIP format for practice abstracts)

**\*Project title (native language):** EUFRUIT : Réseau européen d'évaluation des fruits

**\*Project title (English):** EUFRUIT: European Fruit Network

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### Section A. Summary for EIP dissemination

**\*Keywords:** Variety testing, strawberry

**\*Main geographical location:** FR812 Gard

**Other geographical locations:** FR8 Méditerranée; FR81 Languedoc-Roussillon

**\*Summary (native language):**

En France, les attentes de la filière et du consommateur orientent la production nationale de fraise vers un haut niveau de qualité demandé par le consommateur.

Le choix variétal est la première étape de l'élaboration de la qualité proposée à la vente au consommateur. Les critères d'évaluation concernent l'ensemble de la filière, du producteur au rayon, pour satisfaire le consommateur en termes de prix et de qualité.

L'évaluation variétale concernant la fraise est organisée en réseau, regroupant le Ctifl et quatre stations régionales dont le Ctifl assure la coordination.

L'enjeu pour la production nationale est une offre différenciée de l'offre étrangère, fortement présente sur le marché français. Pour devenir présente sur le marché, une nouvelle variété doit respecter un équilibre entre qualité gustative, qualité visuelle, résistance aux bio agresseurs, aptitude à la conservation et productivité.

En 2017, vingt variétés ont été évaluées au Ctifl, réparties dans deux systèmes de production hors sol chauffé et à froid, comparées aux références de production Gariguette, Clery, Darselect, Matis.

**Summary (english):**

In France, the strawberry industry (from the producer to the retailer) is focused on fruit quality to meet the consumer demand for a "made in France" high quality strawberry. Varietal choice is the first step of quality elaboration.

Testing new strawberry varieties is organized around a national network including Ctifl and four regional stations. Ctifl is coordinating this national network. It takes in account all the steps of the supply chain (from the producer to the retailer) to meet the consumer requirements in terms of price and quality.

The national production aims to differentiate a national quality from the foreign production. To develop a new variety means to meet a balance between diseases and pest resistance, yield, appearance, shelf life ability, taste,...

In 2017, twenty cultivars were evaluated in Balandran Ctifl center toward reference varieties Gariguette, Clery, Darselect and Matis.

### 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 (Wareme-Borgworm), BE335 (Verviers), FR8 Méditerranée; FR81 Languedoc-Roussillon, FR6 SUD-OUEST, FR512 Maine et Loire, FR611 Dordogne, FR812 Gard, 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. Établir 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. Établir 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 analysing 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) • Pcfruit
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)

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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)

## Scanning report

### [author name, partner short name]

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**Country:** France

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

**WP no. and title:** WP2 – Performance of new fruit varieties

**Date:** 04-05-2018

#### Source materials and methodology

The Ctifl is the French national institute for applied research on fruit and vegetables and represents all professions within the industry: from the grower to the retailer. Ctifl's approach is a global one. It covers all production and distribution techniques of fruit and vegetables, from varietal selection and crop management, to logistics and merchandising in retail outlets.

Main research topics in strawberry are : crop protection, innovative cropping techniques, variety trials, fruit quality.

For strawberry, varietal choice is the first step toward meeting the consumer quality demand and the supply chain (from producer to retailer) is facing the challenge to preserve this quality.

Strawberry is present everywhere in France, with multiple cropping systems (open field, protected, table top, heated crop...), and various climatic conditions (oceanic, continental and Mediterranean climates). Strawberry is produce for the fresh market.

Breeding programs actively release new varieties in Europe and nurseries introduce new varieties from a worldwide scale. The French strawberry industry needs references to determine any new valuable varietal possibilities.

Testing new strawberry varieties is organized around a national network including Ctifl and four regional stations. Ctifl is coordinating this national network. Ctifl is a member of Eufirin.

A common protocol was established more than twenty years ago. It takes in account all the steps of the supply chain (from the producer to the retailer) to meet the consumer requirements in terms of price and quality: diseases and pest resistance, yield, appearance, shelf life ability, taste,... Common cultivar references are used in the network in order to compare the results.

The network is organized around 2 levels:

- level A in two locations : new varieties or selections are collected throughout Europe and characterized with a holistic approach of the quality,
- level B in four locations: each regional station selects the new varieties to be tested in level A list, according to regional specifications such as earliness, production system.

As a coordinator, Ctifl gathers information through direct contacts with European breeders or nurseries and transfers it to the network members.

Plants of new varieties to be trialed are collected as trayplants from European breeders and nurseries and trialed in Balandran Ctifl center (Mediterranean border) in two table top cropping systems: heated for early varieties and unheated for early to late season and everbearing cultivars. Results are sent to breeders, nurseries, advisors and researchers.

#### Best practice findings

Strawberry production has increased each year from 46 100 T in 2007 to 60 000 T in 2016 (greenhouse 1 852 ha). Production period last from February to November and the April to June period represents nearly 80%. Main varieties are Gariguette, Clery, Charlotte, Darselect, Ciflorette, Murano, Mara des Bois, Magnum. The variety panel is quite stable; Gariguette is most cropped

<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

variety and is well known by the French consumers. Murano and Magnum are “new comers”. Most of the cultivated varieties were released from French breeding programs; Clery and Murano are exceptional cases.

New varieties are slowly increasing, such as Magnum, Murano, Mariguette, Dream and to a lesser extent Osiris. All these varieties were characterized in the network and references are available from Ctifl.

The varietal evaluation system will have to cope with new constraints:

- the “zero residue” demand emphasize the disease and pest resistance levels, in addition with the objective of Ecophyto 2 Government plan to reduce by 50 % the use of phytosanitary products (-25 % in 2020 and -25 % in 2025),
- cost and lack of workforce to operate in the crop: a high productivity while maintaining a good quality of product (is one of the challenge facing strawberry production,
- development of private evaluation by producer organizations concomitant with the development of club varieties; compromises the role of public and collective evaluation.