

## Scanning report

### Felicidad Fernández Fernández, NIAB EMR

\*Project title (native language): [N/A]

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

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#### Section A. Summary for EIP dissemination

\*Keywords: cherries, peaches, nectarines, apricots, European plums, Japanese plums

\*Main geographical location: UKJ46 West Kent

\*Other geographical locations: UKG11 Herefordshire, UKJ22 East Sussex, UKJ41 Medway, UKJ42 Kent, UKJ43 Kent Thames Gateway, UKJ44 East Kent, UKJ45 Mid Kent, UKJ46 West Kent

\*Summary (native language):

[N/A]

Summary (English):

The UK industry has great deal of interest in expanding stone fruit production both by expanding the season of currently well established crops (cherry and plum) and by initiating and expanding production on novel ones (apricots, peaches ...). NIAB EMR carries out a number of commercially sensitive trials, as do other organisations, but fewer industry-wide trials are now commissioned so results are not always comparable or widely known.

#### 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), 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):**

N/A

**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) • 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

### Felicidad Fernández Fernández, NIAB EMR

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**Country:** United Kingdom

**NUTS 3 region(s)<sup>2</sup>:** UKG11 Herefordshire, UKJ22 East Sussex, UKJ41 Medway, UKJ42 Kent, UKJ43 Kent Thames Gateway, UKJ44 East Kent, UKJ45 Mid Kent, UKJ46 West Kent, UKJ46 West Kent

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

**Date:** 06/05/2017

**Source materials and methodology**

A fruit research station has been based at East Malling since the early 20<sup>th</sup> century under various incarnations, names and ownerships. Most recently, East Malling Research became part of the NIAB group in February 2016 however the core aim remains the same: supporting the UK fruit industry through research from the fundamental to the applied. NIAB EMR has an active cherry breeding programmes funded by industry. NIAB EMR also participated in the COST Action FA1104 "Sustainable production of high quality cherries for the European market" (16/04/2012-15/04/2016); one of the outcomes of this project is the establishment of the EUFRIN Working Group "Sweet and sour cherries" in which NIAB EMR represents the UK.

In plums, NIAB EMR are the academic partner in a BBSRC-funded, industry-led project 'Sustainable Intensification of UK plum production' (2015-2019); this project aims to identify optimum growing techniques and best varieties for UK production.

The East Malling Services (EMS) commercial trials test cultivars of a whole range of stone fruit crops including peaches, nectarines, apricots, plums and cherries for industry under commercially confidential agreements in the same site in Kent. Other advisory services (e.g. FAST) also provide confidential commercial trial services and many producer organizations and marketing desks seek and trial varieties directly from international breeding programmes under exclusive or priority deals. Additionally, the UK growers' levy board (AHDB horticulture) has commissioned industry wide trials for stone fruit to various contractors in the past but none is currently running. Producer organisations and the AHDB also carry out or commission agronomy trials; currently many of these are focussed on the control methods for spotted wing drosophila (SWD).

The main sources for this scanning report are personal communications with industry members and advisors as well as:

Biddlecombe (2013) AHDB Horticulture final report for project TF170: 'Plums: To determine the performance of 6 new plum varieties'

Johnson (2011) AHDB Horticulture final report for project TF 176: 'Cherries and Plums: Evaluation of new and promising scion varieties / selections'

**Best practice findings**

Protocols for variety testing in stone fruit crops vary depending of the organisation that carries them out. The majority are observational trials with out adequate replication for determining statistically significant differences between cultivars in the traits measured. Typically objective measurements include harvest date, yield (kg/tree) % of fruit cracked and rotted, average fruit size (g), firmness (g/mm) and sugar content (°brix). Appearance and flavour are also usually recorded on a subjective (1-5 or 1-9) scale. Additionally, some trials also record fruit size distribution, shelf life and titratable acidity, also, cracking index (for cherry). Varieties are sourced from breeding programmes world wide and can be evaluated for 5-8 yrs. Tree numbers also vary greatly, from 4 or 5 trees in single tree blocks to semi-commercial plots with tens of trees of 2-3 cultivars.

Cherry trials aim to identify early or late cultivars (replacement for 'Merchant' or earlier or later than 'Regina' with better yields). They are conducted almost exclusively on GiSelA 5 rootstocks with a few grown in GiSelA 3 and 6. Most trials are conducted

<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

under nets (birds and/or SWD) or plastic tunnels (industry is increasingly under cover). Control cultivars include 'Merchant', 'Penny', 'Kordia' and 'Sweetheart'. From the last trial funded by AHDB and subsequent commercial trial, four advanced selections from the East Malling breeding programme have been identified as promising and could be released in the next two years. Recent industry uptake of Korvik and Samba has been a result of grower-led trials. 'Sentennial' also appears very promising.

Most plum trials are grown on St Julien A rootstocks but some are also testing more dwarfing rootstocks. In European plums, 'Meritare', 'Haganta' and 'Ferblue' were found to be of interest for UK production back in 2013 but uptake has been variable. 'Meritare' and 'Haganta' were interesting for season extension ('Meritare' starting to crops before 'Opal' and 'Haganta' about the same season as 'Marjorie's seedling' but with better fruit quality). 'Ferblue' stood out for its outstanding flavour but its yield and fruit size were inconsistent and better adapted growing systems might need to be found for the variety to be grown more extensively.

Commercially-funded trials have been commissioned or are being run directly by various producer organisations to identify promising cultivars of apricots, peaches, nectarines and Japanese plums. The general aims for all of them are to identify cultivars that: a) flower sufficiently late to avoid spring frost most years; b) produce reliable yields in UK conditions; c) mature before or alongside the early apple harvest and d) produce good quality fruit. However, results for these trials are confidential.

Whilst commercial exclusives are desirable for marketing, they limit sharing of information and material. This makes it nearly impossible to provide industry-wide recommendations on cultivars.